**DEPARTMENT OF THE INTERIOR**

**Fish and Wildlife Service**

**50 CFR Part 17**

**[Docket No. FWS–R8–ES–2009–0062; 4500030114]**

**RIN 1018-AW85**

# Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Buena Vista Lake Shrew

**AGENCY:** Fish and Wildlife Service, Interior.

**ACTION:** Final rule.

**SUMMARY:** We, the U.S. Fish and Wildlife Service (Service), designate critical habitat for the Buena Vista Lake shrew (*Sorex ornatus relictus*) under the Endangered Species Act (Act). In total, approximately 2,485 acres (1,006 hectares) in Kings and Kern Counties, California, fall within the boundaries of the critical habitat designation. The effect of this regulation is to conserve the Buena Vista Lake shrew's habitat under the Act.

**DATES:** This rule becomes effective on [INSERT DATE 30 DAYS AFTER DATE OF FEDERAL REGISTER PUBLICATION].

**ADDRESSES:** This final rule is available on the Internet at *http://www.regulations.gov*. at Docket No. FWS–R8–ES–2009–0062. Comments and materials received, as well as supporting documentation used in preparing this final rule, are available for public inspection, by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Sacramento, CA, 95825; telephone 916–414–6600; facsimile 916–414–6713.

The coordinates or plot points, or both, from which the maps were generated are included in the administrative record for this critical habitat designation and are available at *http://criticalhabitat.fws.gov/crithab/*, and at *http://www.regulations.gov* at Docket No. FWS–RS–ES–2009–0062, and at the Sacramento Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**). Any additional tools or supporting information that we developed for this critical habitat designation will also be available at the Fish and Wildlife Service website and Field Office set out above, and may also be included in the preamble or at *http://www.regulations.gov*.

**FOR FURTHER INFORMATION CONTACT:** Karen Leyse, Listing Coordinator, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 2800 Cottage Way, Sacramento, CA, 95825; telephone 916–414–6600; facsimile 916–414–6713. If you use

a telecommunications device for the deaf (TDD), call the Federal Information Relay Service (FIRS) at 800–877–8339.

**SUPPLEMENTARY INFORMATION:**

**Executive Summary**

The critical habitat areas we are designating in this rule constitute our current best assessment of the areas that meet the definition of critical habitat for the Buena Vista Lake shrew. In total, we are designating approximately 2,485 acres (ac) (1,006 hectares (ha)), in six units in Kings and Kern Counties, California, as critical habitat for the subspecies. This is a final rule to designate critical habitat for the Buena Vista Lake shrew (shrew).

*Why we need to publish a rule.* Under the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act), any species that is determined to be a threatened or endangered species requires critical habitat to be designated, to the maximum extent prudent and determinable. Designations and revisions of critical habitat can only be completed by issuing a rule. We listed the Buena Vista Lake shrew as an endangered species in 2002 (67 FR 10101; March 6, 2002), proposed critical habitat in 2004 (69 FR 51417; August 19, 2004), and designated final critical habitat in 2005 (70 FR 3438; January 24, 2005). The previous final designation excluded all but 84 acres (ac) under section 4(b)(2) of the Act. In 2009, under the terms of a settlement agreement, we

reproposed the areas originally proposed in 2004 (74 FR 53999; October 21, 2009). We subsequently received new information on additional areas occupied by the shrew, and so revised the proposed critical habitat on July 10, 2012, to include two additional areas and one modification to an existing unit (77 FR 40706). Based on the settlement agreement, we are to submit a final designation to the **Federal Register** by June 29, 2013.

*The basis for our action*. Section 4(b)(2) of the Act states that the Secretary shall designate critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary can exclude an area from critical habitat if she determines the benefits of exclusion outweigh the benefits of designation, unless the exclusion will result in the extinction of the species. The critical habitat areas we are designating in this rule constitute our current best assessment of the areas that meet the definition of critical habitat for the Buena Vista Lake shrew.

*We have prepared an economic analysis of the designation of critical habitat*. In order to consider economic impacts, we have prepared an analysis of the economic impacts of the critical habitat designations and related factors. We announced the availability of the draft economic analysis (DEA) in the **Federal Register** on March 5, 2013 (78FR14245), allowing the public to provide comments on our analysis. We have incorporated the comments and have completed the final economic analysis (FEA) concurrently with this final determination.

*Peer review and public comment*. We sought comments from independent specialists to ensure that our designation is based on scientifically sound data and analyses. We requested opinions from four knowledgeable individuals with scientific expertise to review our technical assumptions, analysis, and whether or not we had used the best available information. We received responses from two of the four peer reviewers. The peer reviewers that responded provided additional information, and suggestions to improve this final rule. Information we received from the peer reviews is incorporated in this final revised designation. We also considered all comments and information received from the public during the comment period.

**Previous Federal Actions**

We published a final rule listing the shrew as endangered in the **Federal Register** on March 6, 2002 (67 FR 10101). The final listing rule is available at *http://www.fws.gov/policy/library/2005/05-982.pdf*. Please refer to the final listing rule for information on Federal actions prior to March 6, 2002, and for additional information on the shrew and its habitat.

On January 12, 2004, the United States District Court for the Eastern District of California issued a Memorandum Opinion and Order (*Kern County Farm Bureau et al*. v. *Anne Badgley, Regional Director of the United States Fish and Wildlife Service, Region 1 et al*., CV F 02–5376 AWIDLB). The order required us to publish a proposed critical habitat determination for the shrew by July 12, 2004, and a final determination by

January 12, 2005. On July 8, 2004, the court extended the deadline for submitting the proposed rule to the **Federal Register** to August 13, 2004. We submitted a proposed rule by the required date, which was published in the **Federal Register** on August 19, 2004 (69 FR 51417). We published a notice in the **Federal Register** making available the DEA for the proposed designation on November 30, 2004 (69 FR 69578), and then published a final critical habitat designation on January 24, 2005 (70 FR 3438). The final designation excluded four of the five proposed units, based on the Secretary of the Interior's authority under section 4(b)(2) of the Act, that the benefits of exclusion outweighed the benefits of inclusion, and that exclusion would not result in the extinction of the subspecies.

In response to a legal complaint and resulting settlement agreement (*Center for Biological Diversity* v. *United States Fish and Wildlife, et al*., Case No. 08-CV-01490-AWI-GSA), we published a new proposed designation, encompassing the same area as the 2004 proposed designation, on October 21, 2009 (74 FR 53999). We subsequently published a notice in the **Federal Register** on April 28, 2011 (76 FR 23781), announcing the availability of a new DEA, and the reopening of the comment period for the new proposed critical habitat designation, the associated DEA, and the amended required determinations. This document also announced a public hearing, which was held in Bakersfield, California, on June 8, 2011. On March 6, 2012, we were granted an extension by the Court to consider additional information on the shrew prior to publishing our new final critical habitat designation (*Center for Biological Diversity* v. *Kempthorne et al*., Case 1:08–cv–01490–AWI–GSA, filed March 7, 2012). We

published a revised proposed rule on July 10, 2012 (77 FR 40706), in which we proposed to designate approximately 5,182 ac (2,098 ha) in seven units in Kings and Kern Counties, California. We published a notice in the Federal Register making available the revised DEA on March 5, 2013 (78 FR 14245), and reopened the comment period on the revised proposed designation and revised DEA. We also announced a public hearing in that document, which took place in Bakersfield, California, on March 28, 2013.

## Background

It is our intent to discuss below only those topics directly relevant to designating critical habitat for the Buena Vista Lake shrew in this final rule. For additional background information, please see the proposed designation of critical habitat for the Buena Vista Lake shrew published on July 10, 2012 (77 FR 40706), and available at *http://ecos.fws.gov*. That information is incorporated by reference into this final rule.

*Species Information.* The Buena Vista Lake shrew is a mammal, approximately the size of a mouse. Like other shrews, the subspecies has a long snout, tiny bead-like eyes, ears that are concealed, or nearly concealed by soft fur, and five toes on each foot (Burt and Grossenheider 1964, p. 2; Ingles 1965, pp. 81–84). Shrews are active day or night. When they are not sleeping, they are searching for food (Burt and Grossenheider 1964, p. 3). The Buena Vista Lake shrew is one of nine subspecies within the ornate shrew (*Sorex ornatus*) species complex known to occur in California (Hall 1981, pp. 37, 38; Owen and Hoffmann 1983, pp. 1–4; Maldonado 1992, p. 3).

**Summary of Comments and Recommendations**

We requested written comments from the public on the proposed designation of critical habitat for the Buena Vista Lake shrew during four comment periods, which took place subsequent to the 2009 proposal (73 FR 53999), the 2011 NOA (76 FR 23781), the 2012 revised proposal (77 FR 40705), and the 2013 notice of availability of the revised DEA (78 FR 14245) (see **Previous Federal Actions**, above). Each of the comment periods ran for 60 days. We contacted appropriate Federal, State, and local agencies; scientific organizations; and other interested parties and invited them to comment on the proposed rule and draft economic analysis during these comment periods.

During the first comment period, we received five comment letters addressing the proposed critical habitat designation. During the second comment period, we received eight comment letters addressing the proposed critical habitat designation or the 2011 draft economic analysis. During the June 8, 2011, public hearing, one individual provided written comments, but we did not receive oral comments directly addressing the proposed designation. During the third comment period, we received four comments directly addressing the 2012 revised proposed critical habitat designation or the 2011 DEA. During the fourth comment period, we received four comments addressing the 2012 revised proposed critical habitat designation or the 2013 DEA. During the March 28, 2013, public hearing, we received one oral comment addressing the 2012 revised proposed critical habitat designation or the 2013 DEA.

All substantive information provided during comment periods has either been incorporated directly into this final determination or addressed below. Comments received were grouped into general issues specifically relating to the proposed critical habitat designation for the shrew and are addressed in the following summary and incorporated into the final rule as appropriate.

*Peer Review*

In accordance with our peer review policy published on July 1, 1994 (59 FR 34270), we solicited expert opinions from four knowledgeable individuals with scientific expertise that included familiarity with the species, the geographic region in which the species occurs, and conservation biology principles. We received responses from two of the peer reviewers.

We reviewed all comments received from the peer reviewers for substantive issues and new information regarding critical habitat for the shrew. The peer reviewers provided additional information, clarifications, and suggestions to improve the final critical habitat rule. We address the two peer reviewers comments in the following summary and have incorporated them into the final rule as appropriate.

*Peer Reviewer Comments*

(1) *Comment*: One peer reviewer referred to the designation as essential to the conservation of the species, and indicated his agreement with our use of best available evidence, our methods, and our identification of essential habitat features (primary constituent elements (PCEs)). He stated that the rule appears to be supported by the latest scientific information; that we have accurately described that information; and that scientific uncertainties seem to have been clearly identified with the implications of those uncertainties described. He also noted that he has no additional information regarding the shrew's conservation needs, or indicating the location of additional populations, but that he is in the process of finalizing a genetic analysis of the shrew as compared to other subspecies in the San Joaquin Valley.

*Our Response*: We thank the reviewer for his comments. Should the genetic analysis provide significant new information regarding essential habitat or populations, we have the option of revising our designation in the future to take the information into account.

(2) *Comment*: The second peer reviewer stated that, because the quantity of habitat necessary to conserve viable populations of the shrew is unknown, all remaining habitat known or suspected to be suitable should be protected. He concluded it was therefore appropriate and necessary to designate the 5,182 ac in 7 units that we had proposed.

*Our Response*: We are designating all occupied areas containing the specific

physical and biological features (the primary constituent elements) essential to the shrew. We delineated each area according to the extent of those features on the landscape, thereby including contiguous areas with essential habitat features to which a shrew population could reasonably be expected to extend. When we learned of the additional occupied areas, we published a revised proposal to include those areas in the designation as well. We consider the proposed areas sufficient for the conservation of the shrew because the proposed areas contain a variety of habitats usable by the shrew, meet the recovery goals established for the shrew (Service 1998, p. 192), and are large enough to accommodate expanding populations.

Although we are excluding one of the seven proposed units (see **Exclusions**, below), we are doing so because we consider the benefits of exclusion to outweigh the benefits of inclusion for the conservation of the shrew in that area. The area (Unit 3) is already protected by various means, and additional protections and benefits to the shrew may result due to exclusion. We thus consider this designation to follow the basic philosophy expressed by the reviewer: that all areas of essential habitat with the potential to benefit the shrew should be protected.

(3) *Comment*: The peer reviewer strongly recommended that we not exclude Unit 3, because the City of Bakersfield's habitat management plan for the area does not ensure optimal conditions for the shrew. Specifically, the plan allows extended periods without water, periodic flooding, and periodic ground disturbance for maintenance and

repair of pumps and other equipment. The reviewer also noted that the City has not yet officially adopted the management plan.

*Our Response*: The City of Bakersfield has now submitted information to indicate it had officially adopted the management plan (Bakersfield Water Board Committee 2011, entire; Chianello 2013, p. 2). Although the habitat management plan may not be completely optimal for the shrew, we consider it to provide the best conservation option. Designation of the unit as critical habitat would not prevent the management drawbacks identified by the reviewer, since these drawbacks do not involve action by a Federal agency. We have worked with the City of Bakersfield over multiple years to address monitoring and protection of shrew habitat. We have consequently concluded that excluding the unit from designation will assist our partnership with the City of Bakersfield to manage more effectively for the conservation of the shrew while still accommodating the City's use of the area as a groundwater recharge basin. For further analysis of the tradeoffs and benefits involved in our decision to exclude, see **Exclusions Under Section 4(b)(2) of the Act—Kern Fan Water Recharge Area**, below.

(4) *Comment*: The peer reviewer suggested we consider designation of the Wind Wolves Preserve (WWP), in southwestern Kern County. We had indicated in the proposed rule (77 FR 40709; July 10, 2012) that shrews in the Wind Wolves Preserve were expected to be adorned ornate shrews (*Sorex ornatus ornatus*), based on preliminary unpublished data from a mitochondrial DNA analysis of a tissue sample taken from one

shrew at that location. The reviewer indicated his understanding, based on conversations with the geneticist who conducted the analysis, that the Wind Wolves sample was actually more similar to Buena Vista Lake shrews than to adorned ornate shrews. The reviewer also noted that additional samples from Wind Wolves Preserve still remain to be statistically analyzed, and that these could potentially corroborate the hypothesis that the shrews at Wind Wolves Preserve are Buena Vista Lake shrews.

*Our Response*: In considering whether to propose the Wind Wolves site as critical habitat for the Buena Vista Lake shrew, Service staff with expertise in genetics reviewed papers on shrew taxonomy and habitat by Dr. Maldonado and others, and noted that the historical range of Buena Vista Lake shrew, as depicted by Owen and Hoffman (1983), shows the Buena Vista Lake shrew as embedded within the range of the more common California ornate shrew (*S. ornatus ornatus*), which occupies more upland areas. They also found that the mitochondrial DNA of the one shrew sample contained a genetic type that occurs in ornate shrews at Tranquility and Helm, but not in any Buena Vista Lake shrew occurrences, suggesting that Wind Wolves Preserve might be the California ornate shrew. Our staff communicated with Dr. Maldonado, who supported our tentative conclusion that the Wind Wolves site contains California ornate shrews (Maldonado 2011, unpaginated). We are aware of the further genetic testing that Dr. Maldonado is conducting, and welcome further information from his study. However, we are responsible for using the best available information to complete the rule within the regulatory time-frame. When genetic analysis of the Wind Wolves samples is completed,

if the analysis supports the presence of Buena Vista Lake shrews at the Wind Wolves Preserve, the critical habitat designation may be revised to take such data into account.

*Comments from States*

During the development of the proposed rule and this final rule, we coordinated with the appropriate State agencies regarding the designation. Section 4(i) of the Act states, "the Secretary shall submit to the State agency a written justification for his failure to adopt regulations consistent with the agency's comments or petition." We did not receive any comments from State agencies regarding this critical habitat designation.

*Public Comments*

(5) *Comment*: Several commenters asked us to exclude Unit 2 based on the implementation of a biological opinion (BO) that we issued in 2004 for a wetlands restoration and enhancement project funded though the North American Wetlands Conservation Act (NAWCA) within the historical lake bed of Goose Lake (Service 2004).

*Our Response*: The terms and conditions in the BO all applied to the means by which groundbreaking activities would be carried out for the project (Service 2004, pp. 20–22). There was thus little provision established for ongoing management of the property for the benefit of the shrew after completion of the project. The BO did include

several conservation recommendations, including: (1) that the effects of restoration activities on the shrew be monitored; (2) that an outreach and education program for the shrew be developed; and (3) that a programmatic BO be undertaken that would consider long-term seasonal wetlands maintenance actions. To our knowledge, none of these recommended conservation actions have been undertaken. In balancing the benefits of exclusion against the benefits of designation, we generally consider the extent to which exclusion would result in ongoing benefits that would not otherwise be realized. Because the NAWCA-funded wetlands improvement project is a completed project, and no ongoing management plan has been established for the conservation benefit of the shrew under the associated BO, the Secretary is not exercising her discretion to exclude Unit 2 under section 4(b)(2) of the Act.

(6) *Comment*: Several commenters asked us to exclude Unit 3 based on the completion and implementation of a habitat management plan (HMP) for the area.

*Our Response*: The Secretary has determined that the benefits of exclusion outweigh the benefits of inclusion of the area identified in Unit 3 as critical habitat. As a result, she has excluded Unit 3 under section 4(b)(2) of the Act. See **Exclusions** below for further discussion of this exclusion.

(7) *Comment*: Three commenters noted that, contrary to our description, the shrew is included as a covered species under the conservation easement establishing the Coles Levee Ecosystem Preserve, which overlaps most of Unit 4. One commenter added

that the easement specifically benefits the shrew by establishing a year-round water supply to the artificial pond near which shrews were first found on the unit.

*Our Response*: Although the easement agreement does not specifically use the term "covered species" to apply to the shrew, the shrew is listed in the easement agreement as a "species of concern" (ARCO and CDFG 1992a, p. 9, Exhibit G p. 5). This qualifies it for certain additional protections beyond those applicable under the agreement to native species generally (ARCO and CDFG 1992a, pp. 7–9). However, these additional measures primarily cover actions that must be taken in association with groundbreaking activities, and do not add protections beyond those typically required for an incidental take permit under the Act.

None of the provisions of the conservation easement, or its associated documents such as the management permit, require or mention a year-round water supply for the artificial pond near which shrews were first found on the unit.

(8) *Comment*: Two commenters asked us to exclude Unit 4 based on: (1) a habitat conservation plan (Elk Hills HCP), which they indicated is being prepared for the nearby Elk Hills Oil Fields; and (2) the location of the unit within the confines of the Coles Levee Ecosystem Preserve.

*Our Response*: The Elk Hills HCP has been in preparation since approximately 2005, and is likely to require several more years for completion. Although the Buena

Vista Lake shrew is likely to be a covered species, the Elk Hills HCP is intended primarily to minimize and mitigate impacts to upland species from oil and gas production in the Elk Hills Oil Fields (Live Oak Associates (LOA). 2006, pp. 1–3, 5). The Elk Hills Oil Fields area is a 75 square-mile (sq-mi) (194 square-kilometer (sq-km)) area west of Unit 4. The Elk Hills HCP will encompass the Elk Hills Oil Fields, as well as selected rights-of-way and conservation lands within a buffer area surrounding the oil fields (LOA 2006, pp. 5, 8, 9). Although Unit 4 lies within the buffer area, not all lands within that area will be covered by the Elk Hills HCP. The best information currently available to us does not indicate whether Unit 4 will be among those areas afforded protection or not. Because the Elk Hills HCP is still unfinished with no expected date of completion and because it is unclear at this time whether the Elk Hills HCP will apply to the Coles Levee Unit, we do not consider the Elk Hills HCP to add to the benefits of excluding the unit from critical habitat designation. Accordingly, we are not recommending and the Secretary is not considering that the areas identified as critical habitat within the proposed Elk Hills HCP be excluded under section 4(b)(2) of the Act.

The 6,059-ac (2,452-ha) Coles Levee Ecosystem Preserve was established in 1992 (Aera Energy 2011, p. 1), and is covered by a conservation easement held by the California Department of Fish and Wildlife (CDFW) (formerly the California Department of Fish and Game (CDFG)). Approximately 143 ac (58 ha) of the 270 ac (109 ha) in Unit 4 are within the Preserve. We interpret the comment to apply only to those areas of overlap. The purpose of the easement is to preserve the property in a natural condition, subject to oil and gas operations of the property owner (ARCO and CDFG 1992a, pp. 1,

2; ARCO and CDFG 1992b, p. 1). The easement includes terms under which habitat disrupted or destroyed by oil and gas operations can be mitigated by designation of lands within the property as compensation lands, (ARCO and CDFG 1992a, pp. 3, 4). All lands not otherwise being used for oil and gas operations are subject to various wildlife protection provisions, some of which likely benefit the shrew. Such provisions include: (1) Restrictions on use of the property to wildlife conservation, and to oil and gas exploration and production; (2) various operation restrictions designed to minimize impacts to wildlife; (3) reclamation provisions for areas no longer needed for oil or gas extraction; and (4) phasing out of then-existing agricultural leases (ARCO and CDFG 1992a, pp. 2, 4–6, 10).

A management permit attached to the easement also requires biological monitoring for implementation of the wildlife mitigation measures, and an annual management meeting between CDFW and the landowner (ARCO and CDFG 1992a, Exhibit D, pp. 5, 6). These provisions are still being carried out by Aera Energy, which obtained ownership of the property from ARCO in 1998 (Occidental of Elk Hills 2009, p. 3; Vance 2013, p. 1). However, Aera Energy does not have an active management permit for the area (Vance 2013, p. 1), so the requirements established by the management permit written for ARCO (Exhibit D) are presumably not enforceable against Aera.

In considering whether to exclude a particular area from designation, such as those portions of Unit 4 that are within the Coles Levee Ecosystem Preserve, we compare the benefits for the listed species of including the area, to the benefits for the listed

species of excluding the area (see **Exclusions**, below). In this case, the shrew would be unlikely to benefit from exclusion. The conservation easement establishing the Coles Levee Ecosystem Preserve was not designed to protect or enhance riparian and wetland habitat. No partnerships exist between ourselves and other entities to advance shrew conservation in the area, so designation does not have the potential to disrupt such partnerships; and the Preserve will continue to operate in the same manner whether we exclude it from designation or not.

We have expressed concern in the past regarding the potential impacts of designation on CDFW's ability to manage for the shrew (70 FR 3457). CDFW is not currently managing for the shrew in the area, with the exception of avoidance measures established by the easement agreement related to groundbreaking activities (as discussed in our response to the previous comment) (Vance 2013, p. 1). Additionally, we expect incremental costs resulting from critical habitat designation in Unit 4 (in the form of additional time spent for Section 7 consultation) to be low, and to be borne primarily by ourselves, any other involved Federal agency, and the project proponent rather than by CDFW (IEc 2013, pp. 4-4, 4-5, 4-9, 4-10). We therefore expect any additional regulatory burden of critical habitat on CDFW to be minimal. In contrast, designation of the area may benefit the shrew by publicizing the shrew's presence and habitat requirements at the site, thereby allowing present and future landowners to better take those requirements into account in their land-use planning. Accordingly, we are not recommending and the Secretary is not considering that the areas identified as critical habitat within the Coles Levee Unit be excluded under section 4(b)(2) of the Act.

(9) *Comment*: Several commenters stated that certain proposed units should not be included in the final critical habitat designation because they are already subject to adequate management or protection, and therefore fail to meet the Act's definition of critical habitat as areas that "may require special management considerations or protection" (15 U.S.C. 1532(5)(A)(i)). Another commenter asked us to include all proposed areas, regardless of adequate management. The commenter noted that two courts, including the 9th Circuit, have indicated that adequate management is not a valid reason to avoid designation.

*Our Response*: We no longer consider adequate management or protections to be a sufficient basis for not designating an area as critical habitat. However, if an area has adequate management or protections, and if designation of critical habitat in the area may compromise the conservation of the species in some manner, then the Secretary may determine that the benefits of excluding the area from designation outweigh the benefits of inclusion (see **Exclusions Based on Other Relevant Impacts**, below).

(10) *Comment*: Several commenters asked us to exclude portions of Units 2 through 5 based on expected economic impacts, and on perceived impacts to public health and safety. The commenters were concerned that health and safety impacts would result from potential disruptions to water conveyance through the units, and to operation and maintenance of existing facilities such as natural gas pipelines. Other commenters asked us to designate all proposed critical habitat, and to make no exclusions.

*Our Response*: We are required by section 4(b)(2) of the Act to take into account the economic and other relevant impacts of critical habitat designation. The Secretary may account for those impacts by excluding any area for which the benefits of exclusion outweigh the benefits of designation, so long as this will not result in extinction of the species. Areas that do not contain any physical or biological features for the species, but that are within critical habitat units, do not constitute critical habitat and need not be excluded.

Critical habitat only directly affects Federal agencies. It does not affect the normal operation, maintenance, repair, or replacement of existing non-Federal facilities unless activities involve Federal agencies (permitting, funding). The delivery of water through existing canals, or of natural gas through existing pipes, on private or state land constitutes the normal operation of those structures, and would not trigger section 7 consultation regardless of whether those structures were located within critical habitat. Additionally, some facilities for which exclusions were requested lack all the physical or biological features identified for the shrew, and so do not constitute critical habitat despite being located within the boundaries of a unit (see comment 11, below). These areas were included within the boundaries of the units because of the difficulty of removing these areas due to mapping constraints. Accordingly, with the exception of Unit 3 (see **Exclusions** below) the Secretary is not exercising her discretion to exclude any areas based on economic or other impacts.

(11) *Comment*: Various commenters asked us to redraw portions of Units 2 through 5 to avoid areas without any physical or biological features or their specific PCEs, such as vegetation-free canals, roads, and pipeline right-of-ways. Additionally, one commenter provided survey information to indicate that several basin areas in Unit 3 are without PCEs for the shrew. Another commenter stated that, based on his first-hand knowledge of the area, most of Unit 2 lacks an overstory of willows and cottonwoods, and that therefore the area does not qualify as critical habitat due to lack of a PCE.

*Our Response*: Based on the information provided, we reevaluated the proposed critical habitat boundaries in Units 2 through 5. As a result, we redrew the maps for Units 2 and 5 to remove two large, primarily concrete-lined canals that do not contain the physical or biological features required by the shrew, or any specific PCEs. In most cases, however, the redrawing of critical habitat units to avoid individual requested areas would require the use of impracticably fine mapping scales. Accordingly, we have removed such areas lacking the physical or biological features from the designation textually, by including the following paragraph in the regulatory description of Buena Vista Lake shrew critical habitat under the **Regulation Promulgation** section below: "Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located" as of the effective date of the designation.

An overstory of willows and cottonwoods is not a PCE for the Buena Vista Lake shrew. Rather, it is an example of plants that may be present in areas exhibiting the first

PCE: riparian or wetland communities containing a complex vegetative structure, with a thick cover of leaf litter or dense mats of low-lying vegetation. Additionally, a given area need only support one of the three PCEs in order to be eligible for designation as critical habitat. As discussed under *Unit 2: Goose Lake Unit*, below, Unit 2 provides suitable moisture for the shrew (PCE 2), as indicated by its scattered freshwater marsh and riparian areas (some of which have been recently restored), and by the intermittent use of the area as a groundwater recharge basin. It also supports a complex vegetative structure (PCE 1) in many areas, including *Frankenia spp.* (frankenia), *Allenrolfea occidentalis* (iodine bush), and *Suaeda spp*. (seepweed) along the slough channels; *Typha spp*. (cattails), *Scirpus spp*. (bulrushes), and *Distichilis spp.* (saltgrass) in intermittently saturated areas; and dense mats of saltgrass and other shrubs in the southern portion of the unit. As is true of all the units, we lack direct evidence of a consistent and diverse supply of prey for the shrew in the unit (PCE 3), but reasonably infer such a supply based on the existence in the unit of habitat that would support it. Such habitat is demonstrated by the presence of the other two PCEs

Because we are excluding Unit 3 in its entirety under section 4(b)(2) (see **Exclusions**, below), we do not reach the question of whether the unit should be redrawn to reflect a lack of PCEs in certain basins.

(12) *Comment*: Several commenters asked us to redraw Unit 5 to avoid the New Rim Ditch, levee, and adjacent roadway. One commenter also disagreed with our statement in the proposed designation that the moisture regime in Unit 5 is maintained by

runoff from the New Rim Ditch, and submitted a report from an engineer who inspected the site and concluded such runoff or seepage was unlikely because, based on the high water mark in the ditch, the water in the ditch remains lower than the surrounding land.

*Our Response*: The bounds of Unit 5, as drawn for the proposed rule and finalized here, do not include the New Rim Ditch and its associated levee and roadway. We have removed reference to runoff from the New Rim Ditch as a contributing factor to the moisture regime in the unit.

(13) *Comment*: Several commenters expressed concern that critical habitat designation would limit various land use practices including: mosquito abatement procedures; groundwater recharge practices around Bakersfield; water conveyance to surrounding farmland; oil and gas development; and flood management.

*Our Response*: Critical habitat designations do not affect ongoing land use practices conducted without the involvement of a Federal agency. Consultation on critical habitat is only triggered when there is a Federal nexus (action carried out, funded, or authorized by a Federal agency). None of the activities listed above require Federal permits or other direct Federal action when carried out on non-Federal lands. Accordingly, we do not expect critical habitat designation to affect these activities.

(14) *Comment*: One commenter indicated that, based on recent trapping surveys, only 6.5 ac (2.6 ha) of habitat in Unit 2 was occupied by the shrew, and the shrew trapped at those locations may have been the adorned ornate shrew (*Sorex ornatus ornatus*).

*Our Response*: The report for the trapping survey in question states that it was not possible from the trapping effort to determine the abundance or distribution of shrews on the site, but that the distance between capture points suggested they may be widely distributed (Uptain *et al*. 2004, p. 8). We drew the bounds of Unit 2 to encompass those areas in the vicinity of the trapping locations that exhibit at least one of the three PCEs essential to the Buena Vista Lake shrew. We characterize shrews trapped in that area as Buena Vista Lake shrews because the area is within the mesic (moist) lower elevation range of the Buena Vista Lake shrew rather than the semi-arid higher elevation range of the adorned ornate shrew (77 FR 40709). Genetic tests conducted in 2006 on samples from the Goose Lake population are consistent with this characterization (Maldonado 2006, p. i; Service 2011, pp. 9, 10).

(15) *Comment*: One commenter expressed concern that no standardized survey methodology was employed for the identification of areas occupied by Buena Vista Lake shrews.

*Our Response*: We are required by section 4(b)(2) of the Act to designate critical habitat on the basis of the best scientific data available. The surveys and other

information we used to determine occupied locations constitute those best data, despite the lack of a standardized survey methodology.

(16) *Comment*: Two commenters thought we should include additional habitat in the designation to provide for recovery. One of those commenters noted that the areas proposed do not meet the recovery recommendations of our recovery plan for Upland Species of the San Joaquin Valley, California ("Recovery Plan", Service 1998, p. 192).

*Our Response*: We note that, normally, it is not necessary for critical habitat to coincide with recovery plan recommendations in order to meet its requirements under the Act. Recovery plans, when available, constitute part of the best scientific evidence that we must consider when designating critical habitat. However, recovery plans do not themselves identify areas with features essential to the conservation of a species. They can therefore inform, but may not determine, the critical habitat designation process.

In addition, the comment regarding the recovery plan was made in response to our 2009 proposed designation, which included approximately 4,649 ac (1,881 ha) in five units. The Recovery Plan recommended three or more disjunct occupied sites comprising a total of 4,940 ac (2,000 ha). Our revised proposed designation of July, 2012 (77 FR 40705) included two additional units, and also increased the acreage of one of the existing units (Unit 4). Accordingly, the revised proposal included approximately 5,182 ac (2,098 ha) in 7 units, and thus met the acreage recommendations of the Recovery Plan. We are completely excluding one of those units (Unit 3) from critical habitat designation

(see **Exclusions**, below), but the site retains the physical and biological habitat features that the shrew requires, and will be managed for the shrew's conservation. We therefore consider the final critical habitat designation to comport well with the recovery plan recommendations.

(17) *Comment*: One commenter requested the legal descriptions of the units.

*Our Response*: The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat designation. The coordinates or plot points or both on which each map is based are available to the public at *http://criticalhabitat.fws.gov/crithab/*, and at *http://www.regulations.gov* at Docket No. FWS–R8–ES–2009–0062, and at the Sacramento Fish and Wildlife Office (see **For Further Information Contact**, above).

(18) *Comment*: One commenter noted that the DEA was not available during the comment period immediately following publication of the 2012 revised proposed critical habitat designation (77 FR 40705). The commenter was concerned that: (1) We would proceed with critical habitat designation without completing the DEA; (2) commenters on the proposed rule would not have the benefit of information provided by the DEA; and (3) the opening of a separate comment period subsequent to completion of the DEA would improperly incrementalize the notice and comment process.

*Our Response*: We published a notice in the **Federal Register** making available our completed DEA on March 5, 2013 (78 FR 14245). The notice opened a 60-day comment period for comments on either the DEA or on the July 10, 2012, proposed designation (77 FR 40706). Commenters therefore have had the benefit of reviewing both the proposed designation and a completed DEA during an open comment period and were able to comment on the proposed rule, the revised proposed rule, the DEA, and all associated documents in a nonincrementalized fashion.

(19) *Comment*: Several commenters stated that the critical habitat designation provides no conservation benefit for the shrew, as indicated both by our statements to that effect in our 2004 proposed and 2005 final designations, and by the fact that the DEA estimates critical habitat to result in no additional conservation actions beyond those that would have been implemented due to the shrew's status as an endangered species.

*Our Response*: Our 2004 and 2005 documents indicated our opinion at the time that critical habitat provides "little" additional protection "in most circumstances." The statement thus does not indicate that critical habitat provides no additional protection to the shrew. Additionally, while the DEA does state that we are "unable to foresee a circumstance in which critical habitat would change the conservation efforts recommended for the shrew" (IEc 2013, p. ES-4), that does not account for benefits resulting from the educational and notification value of critical habitat. For instance, by identifying and publishing here the physical and biological habitat features required by the shrew, we inform landowners and Federal agencies of the shrew's habitat needs prior

to the beginning of any subsequent consultations, thereby allowing them to plan for, and better incorporate, appropriate avoidance and minimization measures into their initial project descriptions.

(20) *Comment*: Several commenters noted that section 2(c)(2) of the Act requires us to "cooperate with State and local agencies to resolve water resource issues in concert with the conservation of endangered species." The commenters stated that critical habitat designation for the shrew would raise such issues, and that we must therefore cooperate with State and local agencies (to a greater extent than we have already) in order to resolve them.

*Our Response*: We do not expect the designation of critical habitat for the shrew to raise water resource issues. Water deliveries through existing canals in designated units constitute non-Federal actions, and so do not require consultation for impacts to critical habitat. Construction of new canals within critical habitat would potentially affect the shrew directly, and so would trigger consultation regardless of critical habitat designation.

(21) *Comment*: One commenter stated that we did not vigorously defend our 2005 final critical habitat designation, and that in reaching a settlement agreement to repropose critical habitat we excluded many affected parties from the process.

*Our Response*: By reaching a settlement agreement on the designation of critical

habitat, we have not excluded any affected parties from the overall process of critical habitat designation. In fact the opposite may be true as we have had four comment periods totaling 140 days and two public hearings on the 2009 proposed critical habitat and 2012 revision.

(22) *Comment:* One comment stated that the economic analysis should provide an analysis of the monetary benefits of critical habitat designation. The comment describes, that while Executive Order 12866 directs Federal agencies to provide an assessment of both the social costs and benefits of proposed regulatory actions, the Draft Economic Analysis (DEA) fails to evaluate the benefits and only calculates the costs. The comment further stated that methodologies exist to calculate both direct and ancillary benefits, such as maintaining open space, maintaining or revegetating riparian areas for protecting and improving water quality and quantity, preservation of native habitat and migration corridors for other species, and protection of clean air. Because these and other benefits of critical habitat designation were not quantified or detailed qualitatively, the comment asserted that the DEA is inadequate and the Secretary should not rely on it to exclude any areas from critical habitat.

*Our Response*: As described in Chapter 5 of the DEA, critical habitat designation is not expected to generate: (1) Additional conservation measures for the Buena Vista Lake shrew; (2) changes in economic activity; or (3) changes to land management. Absent any changes in the above, incremental economic benefits are not expected to result from the designation of critical habitat.

(23) *Comment:* One comment stated that the term "ancillary benefits" in the DEA appears to minimize the importance of all coincident benefits of critical habitat designation.

*Our Response*: The DEA defines "ancillary benefits" consistent with the Office of Management and Budget's (OMB's) Circular A-4, which provides Federal Agencies with guidelines for conducting economic analyses of regulations. Specifically section 2.3.3 of the DEA defines ancillary benefits as, "favorable impacts of a rulemaking that are typically unrelated, or secondary, to the statutory purpose of the rulemaking." Chapter 5 of the DEA clarifies that the primary intended purpose of the critical habitat designation is to support the conservation of the Buena Vista Lake shrew. Thus, any other potential benefits would be considered ancillary benefits of the rulemaking.

(24) *Comment:* Two comments stated that the DEA does not analyze the cumulative effects of critical habitat designation. One commenter stated that there would be indirect and cumulative economic and social effects of lost local water resources. In addition, a comment stated that there will be cumulative effects on water management activities, farming, and other activities on neighboring properties of designating all four units collectively.

*Our Response*: Chapter 1 of the DEA describes that the geographic scope of the analysis includes all the units of proposed critical habitat, as described in the proposed

rule. The analysis therefore considers the potential economic impact of designating all units as critical habitat for the species. Further, as discussed in Chapter 4 of the DEA, we are unable to foresee a circumstance in which critical habitat designation would change the conservation efforts recommended for the shrew. Consequently, the incremental impacts quantified in the DEA are limited to additional administrative costs of section 7 consultation. Critical habitat designation is not anticipated to affect water management, farming and other activities within or adjacent to the critical habitat area.

(25) *Comment:* One comment stated that the economic analysis should include all occupied and suitable unoccupied habitat and not rely on the draft critical habitat as described in the proposed rule. Another comment asserted that the economic analysis fails to include all critical habitat areas for the recovery of the species.

*Our Response*: The economic analysis evaluates potential impacts of critical habitat designation in the areas in which we have proposed critical habitat in the proposed rule. The proposed rule did not include any proposed, unoccupied habitat for the species; accordingly, the economic analysis does not consider impacts of designating these areas as critical habitat. We have determined that the areas designated as critical habitat are sufficient to meet the standards of conserving the species and its habitat and other unoccupied areas were not needed for the species.

(26) *Comment:* One comment stated that the conclusion in the DEA that conservation efforts under the Draft Kern County Valley Floor Habitat Conservation Plan

(HCP) are unlikely to change due to critical habitat designation is incorrect. The comment asserts that, when critical habitat is designated, we and California Department of Fish and Wildlife staff review designated lands under heightened scrutiny, resulting in greater survey, take avoidance, and mitigation requirements for any potential project. Similarly, the comment states, both agencies will view properties that are proximate to critical habitat lands as being subject to similar scrutiny and will be concerned about higher mitigation and avoidance requirements.

*Our Response*: As discussed in Section 4.2.6 of the DEA, we anticipate that the same conservation efforts for the shrew will be recommended for the Kern County Valley Floor HCP regardless of whether critical habitat is designated. Specifically, because locations occupied by the shrew are so rare, we expect to recommend protection of such locations for the HCP whether or not CH is designated. As such, critical habitat is not expected to change any survey, mitigation, or other conservation efforts that we recommend be incorporated into the HCP for the shrew.

(27) *Comment:* According to one comment provided on the DEA, critical habitat could adversely affect agricultural productivity and the ability of the affected agricultural and urban water districts to operate if water deliveries are restricted. The comment further stated that the entire City of Bakersfield Kern Fan Water Recharge Unit is proposed for designation and that designation would result in restricted groundwater recharge practices that would adversely affect the ability of the City to provide adequate public drinking water supplies. The commenter stated that the analysis should consider

the economic impacts of restricting water supply operations and maintenance upstream of the proposed critical habitat.

*Our Response*: As described in Section 3.3 of the DEA, the City of Bakersfield owns all acres included in proposed Unit 3, which is located entirely within the Kern Fan Water Recharge Area (KFWRA). The City operates the site for the purposes of flood control, wildlife conservation, limited access public uses, water conservation, and mineral production. In 2004, the City developed a Buena Vista Lake shrew management plan for the site and has managed the area according to this plan since 2005, including surveying for the species, limiting public access, terminating livestock grazing, zoning and managing the entire area as open space, and engaging in water-spreading activities. We do not expect review of this management plan following critical habitat to result in recommendations for changes in shrew conservation. As a result, no additional restrictions to groundwater recharge practices or water supply operations and maintenance are anticipated to result from the designation of critical habitat for the shrew.

(28) *Comment:* One comment expressed concern that the critical habitat designation may adversely affect the duties of the District to manage the Outlet Canal of the Coles Levee in Unit 4 for the purposes of water delivery and flood control. The comment noted that the current management regime of the Canal and Coles Levee Preserve already provide conservation benefits to the shrew and that the District is in the process of preparing a detailed management plan for the shrew. In addition, the comment

stated that the current management of the artificial pond on the Coles Levee Preserve according to a conservation easement held by the California Department of Fish and Wildlife is designated to benefit the shrew.

*Our Response*: Section 3.4 of the DEA identifies Aera Energy, Inc. as the manager of 223 ac (90 ha) of proposed critical habitat in Unit 4. Consistent with this comment letter, the Environmental Health and Safety Advisor of Aera Energy, Inc. confirmed that the proposed critical habitat is located in a slough within which preserve managers implement conservation for several species, including the shrew. The DEA also describes that wells within the proposed Unit are managed under a conservation easement agreement that incorporates conservation practices that are similar to those that we recommended through section 7 consultation for other activities. This comment letter adds that management of the Outlet Canal also considers impacts on shrews. It is because activities in Unit 4 are already managed for the conservation of the species that no section 7 consultations have taken place in Unit 4 that consider the shrew. In the case that a Federal nexus exists triggering section 7 consultation on activities in this area in the future, we may review these activities, including operations of the Outlet Canal or management of the artificial pond or energy developments. However, we do not anticipate that critical habitat designation will significantly change the outcome of any section 7 consultations. Although we will fully evaluate the effects of future Federal actions being consulted upon to ensure that the action does not result in adverse modification to designated critical habitat, we expect any recommendations we make to avoid jeopardy to the species will also in most instances avoid adverse modification to

critical habitat.

(29) *Comment:* One comment noted that the DEA statement in section 3.4 that, "Unit 4 is located entirely within the Coles Levee Ecosystem Preserve," is incorrect. The commenter stated that therefore the economic analysis likely ignores economic impacts to other landowners and easement holders in Unit 4.

*Our Response*: The referenced sentence in Section 3.4 is corrected in the Final Economic Analysis (FEA) to reflect that Aera Energy manages a portion of Unit 4 as the Coles Levee Ecosystem Preserve. Activities occurring within Unit 4, however, are currently managed with shrew conservation in mind under various conservation easements and management plans, as described above. Further, we expect that any conservation recommendations we may make as part of consultation on activities in this area in the future would be made regardless of critical habitat designation. Consequently, the error highlighted in this comment does not affect the conclusions of the DEA.

(30) *Comment:* A comment stated that the DEA underestimates economic impacts of critical habitat designation, asserting that critical habitat designation restricts the free use of property, including water and water rights, and therefore imposes an opportunity cost on property owners.

*Our Response*: Chapter 2 of the DEA describes the regulatory requirements of critical habitat designation as follows: "When critical habitat is designated, section 7

requires Federal agencies to ensure that their actions will not result in the destruction or adverse modification of critical habitat (in addition to considering whether the actions are likely to jeopardize the continued existence of the species)." As such, critical habitat designation does not directly restrict or regulate private activities occurring on private lands absent Federal funding or permitting. In the case of Buena Vista Lake shrew critical habitat, activities that may result in the destruction or adverse modification of critical habitat would likely also result in jeopardy to the species. Critical habitat is therefore not expected to result in additional recommendations for conservation for the species and does not further restrict, for example water rights, beyond effects generated by the listing of the species. The DEA acknowledges that, in some cases, critical habitat may generate indirect impacts on property owners, for example in the case that the designation triggers changes in State or local regulations or land management practices. The DEA did not, however, identify such changes as likely to result from critical habitat designation for the Buena Vista Lake shrew.

(31) *Comment:* A comment stated that the DEA fails to address the economic report prepared by Dr. Sunding and submitted as a comment to the previous (2004) proposed critical habitat and associated economic analysis. Dr. Sunding concluded that critical habitat for the Buena Vista Lake shrew could "have the potential to exceed $21.8 million annually with a present value of over $311 million."

*Our Response*: The analysis developed by Dr. Sunding is based on assumptions regarding restrictions on water access due to the designation of critical habitat.

Specifically, the analysis considers a scenario in which the banked water from the Kern River and Friant-Kern Canal in Unit 3 are made unavailable to the Pioneer Project, Kern Water Bank, and Berrenda Mesa Project. The analysis then estimates the "replacement value" of this water at a rate of $209 per acre-foot for a total of $9.1 million per year (43,337 acre-feet banked annually). The analysis then evaluates "secondary impacts" resulting from timing of water supply and economic dislocation, assuming a revenue multiplier of 2.2 (essentially bringing the $209 per acre-foot estimate to $500 per acre-foot). The resulting present-value impacts are in excess of $311 million ($21.8 million annually).

As described above and detailed in Chapter 4 of the DEA, critical habitat designation is not anticipated to result in additional conservation for the shrew (i.e., we do not anticipate critical habitat to result in additional restrictions on water access). The assumption that the banked water from the Kern River and Friant-Kern Canal in Unit 3 would be inaccessible because of critical habitat designation is therefore not an expected impact of critical habitat designation. Consequently, the results of Dr. Sunding's evaluation are not considered impacts of critical habitat designation in the DEA.

(33) *Comment:* According to one comment, proposed Unit 5 consists of two separate legal parcels separated by a north south canal that is capable of receiving water flows through the New Rim Ditch and conveying supplemental water to 940 ac (380 ha) of nearby land. In the case that the designation results in the canal becoming not usable, up to 6,400 ac (2,590 ha) of farm ground will be affected. The comment asserted that this

could result in hundreds of thousands of dollars in reconstruction costs for an alternate delivery system in addition to the impact on the 6,400 ac (2,590 ha) of farmland.

*Our Response*: As described above and in Chapter 4 of the DEA, critical habitat designation for the shrew is not expected to result in additional restrictions on water use or access. As such, we do not anticipate the need to reconstruct alternate delivery systems because of critical habitat designation.

(34) *Comment:* One comment stated that the DEA fails to appreciate the loss inherent in the need for buffer zones around the critical habitat, which in essence become "unofficial" critical habitat requiring another buffer and so on.

*Our Response*: The DEA evaluates potential economic impacts on projects or activities that may result in the destruction or adverse modification of critical habitat. This includes projects or activities outside of the critical habitat area that may affect the primary constituent elements within the critical habitat area. The designation of critical habitat does not inherently result in the creation of buffer zones in areas adjacent to the designated critical habitat, and so would not properly be a subject of analysis in the Economic Analysis at either the draft or final stage.

(35) *Comment:* A comment submitted by Southern California Gas (SoCalGas) clarifies that the San Joaquin Valley (SJV) HCP, if finalized, will incorporate conservation for the Buena Vista Lake shrew as the species is known to occur in this

area. The comment notes that page 3-13 of the DEA describes our uncertainty with respect to the nature of Buena Vista Lake shrew conservation measures that SoCalGas plans to incorporate into the HCP. SoCalGas commented that it intends to perform preactivity surveys in suitable Buena Vista Lake shrew habitat, establish exclusion zones around suitable habitat, and provide biological monitors during construction, as well as restore or compensate for disturbed habitat.

*Our Response*: The FEA incorporates the clarifications from SoCalGas with respect to the SJV HCP.

(36) *Comment:* One comment stated that the DEA does not recognize costs to ourselves resulting from the cycle of critical habitat rulemaking and litigation that we identified in the 2005 final rule as taking up a significant portion of the our budget.

*Our Response*: The purpose of the economic analysis is to identify the incremental impacts associated with the designation of critical habitat. Although the costs of revising or re-doing critical habitat based on litigation is of concern and can require significant time and resources, we cannot predict when these costs may occur or to what degree in the future. Additionally, identifying and including these types of costs are outside the scope of our requirements for determining the economic impacts for a specific critical habitat designation.

**Summary of Changes From the Proposed Rule**

In preparing our final designation of critical habitat for the Buena Vista Lake shrew, we reviewed comments received regarding the 2009 proposed designation, the 2012 revised proposed designation, the initial DEA of 2011, and the revised DEA of 2013. We revised the map unit labels in our 2013 document noticing the availability of the revised DEA, and we keep those revised labels in this final designation. Additionally, this final designation reflects minor clarifications in the text of the 2012 revised proposal, as well as the following more substantive changes:

(1) Under section 4(b)(2) of the Act, the Secretary is excluding proposed Unit 3 (the Kern Fan Recharge Unit). For more information, refer to **Exclusions Based on Other Relevant Impacts**, below.

(2) We have refined our mapping boundaries by removing large canals lacking PCEs from Units 2 and 5 (Goose Lake and Coles Levee Units).

(3) We evaluated any suggested changes and clarifications we received from the public during our public comment periods and incorporated those changes into this final designation as appropriate.

## Critical Habitat

*Background*

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined under section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with ourselves, that any action

they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Under the first prong of the Act's definition of critical habitat, areas within the geographical area occupied by the species at the time it was listed are included in a critical habitat designation if they contain physical or biological features (1) which are essential to the conservation of the species and (2) which may require special management considerations or protection. For these areas, critical habitat designations identify, to the extent known using the best scientific and commercial data available, those physical or biological features that are essential to the conservation of the species (such as space, food, cover, and protected habitat). In identifying those physical or biological features within an area, we focus on the principal biological or physical constituent elements (primary constituent elements such as roost sites, nesting grounds,

seasonal wetlands, water quality, tide, soil type) that are essential to the conservation of the species. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Under the second prong of the Act's definition of critical habitat, we can designate critical habitat in areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For example, an area currently occupied by the species but that was not occupied at the time of listing may be essential to the conservation of the species and may be included in the critical habitat designation. We designate critical habitat in areas outside the geographical area occupied by a species only when a designation limited to its range would be inadequate to ensure the conservation of the species.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific and commercial data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106-554; H.R. 5658)), and our associated Information Quality Guidelines provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources

of information as the basis for recommendations to designate critical habitat.

When we are determining which areas should be designated as critical habitat, our primary source of information is generally the information developed during the listing process for the species. Additional information sources may include the recovery plan for the species, articles in peer-reviewed journals, conservation plans developed by States and counties, scientific status surveys and studies, biological assessments, other unpublished materials, or experts' opinions or personal knowledge.

Habitat is dynamic, and species may move from one area to another over time. We recognize that critical habitat designated at a particular point in time may not include all of the habitat areas that we may later determine are necessary for the recovery of the species. For these reasons, a critical habitat designation does not signal that habitat outside the designated area is unimportant or may not be needed for recovery of the species. Areas that are important to the conservation of the species, both inside and outside the critical habitat designation, will continue to be subject to: (1) conservation actions implemented under section 7(a)(1) of the Act, (2) regulatory protections afforded by the requirement in section 7(a)(2) of the Act for Federal agencies to insure their actions are not likely to jeopardize the continued existence of any endangered or threatened species, and (3) section 9 of the Act's prohibitions on taking any individual of the species, including taking caused by actions that affect habitat. Federally funded or permitted projects affecting listed species outside their designated critical habitat areas may still result in jeopardy findings in some cases. These protections and conservation

tools will continue to contribute to recovery of this species. Similarly, critical habitat designations made on the basis of the best available information at the time of designation will not control the direction and substance of future recovery plans, habitat conservation plans (HCPs), or other species conservation planning efforts if new information available at the time of these planning efforts calls for a different outcome.

*Physical or Biological Features*

In accordance with section 3(5)(A)(i) and 4(b)(1)(A) of the Act and regulations at 50 CFR 424.12, in determining which areas within the geographical area occupied by the species at the time of listing to designate as critical habitat, we consider the physical or biological features essential to the conservation of the species and which may require special management considerations or protection. These include, but are not limited to:

(1) Space for individual and population growth and for normal behavior;

(2) Food, water, air, light, minerals, or other nutritional or physiological requirements;

(3) Cover or shelter;

(4) Sites for breeding, reproduction, or rearing (or development) of offspring; and

(5) Habitats that are protected from disturbance or are representative of the historical, geographical, and ecological distributions of a species.

We derive the specific physical or biological features essential for the Buena Vista Lake shrew from studies of this species' habitat, ecology, and life history as described in the **Critical Habitat** section of the revised proposed rule to designate critical

habitat published in the **Federal Register** on July 10, 2012 (77 FR 40706), and in the information presented below. Additional information can be found in the final listing rule published in the **Federal Register** on March 6, 2002 (67 FR 10101); in the 2011 5-Year Review and in the Recovery Plan for Upland Species of the San Joaquin Valley, California (*http://ecos.fws.gov*). We have determined that the Buena Vista Lake shrew requires the following physical or biological features:

*Space for Individual and Population Growth and Normal Behavior*

Historically, the Buena Vista Lake shrew was recorded in association with perennial and intermittent wetland habitats along riparian corridors, marsh edges, and other palustrine (marsh type) habitats in the southern San Joaquin Valley of California. The shrew presumably occurred in the moist habitat surrounding wetland margins in the Kern, Buena Vista, Goose, and Tulare Lakes on the valley floor below elevations of 350 feet (ft) (107 meters (m)) (Grinnell 1932, p. 389; Hall 1981, p. 38; Williams and Kilburn 1984, p. 953; Williams 1986, p. 13; Service 1998, p. 163). With the draining and conversion of the majority of the Buena Vista Lake shrew's natural habitat from wetland to agriculture, and the channelization of riparian corridors for water conveyance structures, the vegetative communities associated with the Buena Vista Lake shrew were lost or degraded, and nonnative plant species replaced those associated with the shrew (Grinnell 1932, p. 389; Mercer and Morgan, 1991 p. 9; Griggs 1992, p. 11; Service 1998, p. 163). Open water does not appear to be necessary for the survival of the shrew. The habitat where the shrew has been found contains areas with both open water and mesic

environments (Maldonado 1992, p. 3; Williams and Harpster, 2001 p. 12). However, the availability of water contributes to improved vegetation structure and diversity, which improves cover availability. The presence of water also attracts potential prey species, improving prey diversity and availability.

Current survey information has identified eight areas where the Buena Vista Lake shrew has been found in recent years (Maldonado 2006, p. 16; Williams and Harpster 2001, p. 1; ESRP 2005, p. 11): the former Kern Lake Preserve (Kern Preserve) on the old Kern Lake bed, the Kern Fan water recharge area, the Coles Levee Ecological Preserve (Coles Levee), the Kern National Wildlife Refuge (Kern NWR), the Goose Lake slough bottoms (Goose Lake), the Atwell Island land retirement demonstration site (Atwell Island), the Lemoore Wetland Reserve, and the Semitropic Ecological Reserve (also known as Main Drain or Chicca and Sons). Based on most areas in which Buena Vista Lake shrews have been found, the shrew appears to strongly prefer marshy areas or areas with moist riparian habitat.

The single occupied site lacking these characteristics is Atwell Island, which has no standing water or riparian vegetation, and which is surrounded by intensively farmed cropland. As discussed in our proposed critical habitat designation (77 FR 40706), we speculate that shrews may persist at Atwell Island by inhabiting rodent burrows and deep cracks in the soil, both of which may provide additional moisture, invertebrate prey, and cover for the shrews. However, we currently lack sufficient information to determine the long-term suitability of this habitat type for Buena Vista Lake shrews, and do not

currently believe that this type of habitat is essential to the conservation of the species and so have not designated the Atwell Island site as critical habitat.

*Food, Water, Air, Light, Minerals, or Other Nutritional or Physiological Requirements*

The specific feeding and foraging habits of the Buena Vista Lake shrew are not well known. In general, shrews primarily feed on insects and other animals, mostly invertebrates (Harris 1990, p. 2; Maldonado 1992, p. 6). Food probably is not cached and stored, so the shrew must forage periodically day and night to maintain its high metabolic rate (Burt and Grossenheider 1964, p. 3).

Vegetation in the marshy and moist riparian communities described above provide a diversity of structural layers and plant species and likely contribute to the availability of prey for shrews. Therefore, conservation of the shrew should include consideration of the habitat needs of prey species, including structural and species diversity and seasonal availability. Shrew habitat must provide sufficient prey base and cover from which to hunt in an appropriate configuration and proximity to nesting sites. The shrew feeds indiscriminately on available larvae and adults of several species of aquatic and terrestrial insects. An abundance of invertebrates is associated with moist habitats, such as wetland edges, riparian habitat, or edges of lakes, ponds, or drainages that possess a dense vegetative cover (Owen and Hoffmann 1983, p. 3). Therefore, based on the information above, we identify a consistent and diverse supply of invertebrate prey

to be an essential component of the biological features essential for the conservation of the Buena Vista Lake shrew.

*Cover or Shelter*

The vegetative communities associated in general with Buena Vista Lake shrew occupancy are characterized by the presence of (but are not limited to): *Populus fremontii* (Fremont cottonwood), *Salix spp*. (willows), *Salicornia spp*. (glasswort), *Elymus spp*. (wild-rye grass), *Juncus spp*. (rush grass), and other emergent vegetation (Service 1998, p. 163). These communities are present at all sites but Atwell Island. In addition, Maldonado (1992, p. 6) found shrews in areas of moist ground that was covered with leaf litter and near other low-lying vegetation, branches, tree roots, and fallen logs; or in areas with cool, moist soil beneath dense mats of vegetation that were kept moist by proximity to the water line. He described specific habitat features that would provide suitable habitat for the shrew: (1) Dense vegetative cover; (2) a thick, three-dimensional understory layer of vegetation and felled logs, branches, and detritus or debris; (3) heavy understory of leaf litter with duff overlying soils; (4) proximity to suitable moisture; and (5) a year-round supply of invertebrate prey. Williams and Harpster (2001, p. 12) determined that, although moist soil in areas with an overstory of willows or cottonwoods appeared to be favored, they doubted that such overstory was essential.

The communities in which Buena Vista Lake shrews have primarily been found are characterized by dense mats of leaf litter or herbaceous vegetation. The insect prey of

the shrew also thrives in the dense matted vegetation. Although shrews have also been found at Atwell Island, in an area largely devoid of vegetation but characterized by deep cracks in the soils, little is currently known of the shrew or habitat needs at this site.

The Buena Vista Lake shrew is preyed upon by small mammalian predators as well as by avian predators (Maldonado 1992, p. 7). Dense vegetative structure provides the cover or shelter essential for evading predators. It also serves as habitat for breeding and reproduction, and allows for the protection and rearing of offspring and the growth of adult shrews. Therefore, based on the information above, we identify riparian and wetland communities, and areas with suitable soil moisture that support a complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation to be the essential components of the physical and biological features essential to the conservation of the species.

*Sites for Breeding, Reproduction, or Rearing (or Development) of Offspring*

Little is known about the reproductive needs of the Buena Vista Lake shrew. The breeding season begins in February or March and ends in May or June, but can be extended depending on habitat quality and available moisture (Paul Collins 2000, p. 12). The edges of wetland or marshy habitat provide the shrew with a sheltered and hospitable environment, and provide a prey base that enables the shrew to give birth and raise its young. The dense vegetative understory also provides young with cover from predators. Dense vegetation also allows for the soil moisture necessary for a consistent supply of

terrestrial and aquatic insect prey (Freas 1990, p. 8; Kirkland 1991, p. 15; Maldonado 1992, p. 3; Maldonado *et al*. 1998, p. 1; Ma and Talmage 2001, p. 123).

*Habitats Protected From Disturbance or Representative of the Historical, Geographic, and Ecological Distributions of the Species*

Preserving what little habitat remains for the Buena Vista Lake shrew is crucial to the survival of the species. Many factors negatively impact and restrict the shrew and its habitat, including selenium toxicity, habitat fragmentation, urban development, and the effects of climate change. The combined effects of climate change and habitat fragmentation have put immense pressure on species in highly altered or developed areas like the San Joaquin Valley (Hannah *et al*. 2005, p. 4). Development, draining of wetlands, or the conversion of areas to agriculture has restricted the species to small islands of habitat with little to no connectivity or opportunity for expansion of its range. Climate change is a particular challenge for a variety of species because the interaction between additional stressors associated with climate change and current stressors could push species beyond their ability to survive (Lovejoy 2005, pp. 325–326), including the Buena Vista Lake shrew.

*Climate Change*

Our analyses under the Endangered Species Act include consideration of ongoing and projected changes in climate. The terms "climate" and "climate change" are defined

by the Intergovernmental Panel on Climate Change (IPCC). The term "climate" refers to the mean and variability of different types of weather conditions over time, with 30 years being a typical period for such measurements, although shorter or longer periods also may be used (IPCC 2007a, p. 78). The term "climate change" thus refers to a change in the mean or variability of one or more measures of climate (such as, temperature or precipitation) that persists for an extended period, typically decades or longer, whether the change is due to natural variability, human activity, or both (IPCC 2007a, p. 78).

Scientific measurements spanning several decades demonstrate that changes in climate are occurring, and that the rate of change has been faster since the 1950s. Examples include warming of the global climate system, and substantial increases in precipitation in some regions of the world and decreases in other regions. (For these and other examples, see IPCC 2007a, p. 30; and Solomon *et al*. 2007, pp. 35–54, 82–85). Results of scientific analyses presented by the IPCC show that most of the observed increase in global average temperature since the mid-20th century cannot be explained by natural variability in climate, and is "very likely" (defined by the IPCC as 90 percent or higher probability) due to the observed increase in greenhouse gas (GHG) concentrations in the atmosphere as a result of human activities, particularly carbon dioxide emissions from use of fossil fuels (IPCC 2007a, pp. 5–6 and figures SPM.3 and SPM.4; Solomon *et al*. 2007, pp. 21–35). Further confirmation of the role of GHGs comes from analyses by Huber and Knutti (2011, p. 4), who concluded it is extremely likely that approximately 75 percent of global warming since 1950 has been caused by human activities.

Scientists use a variety of climate models, which include consideration of natural processes and variability, as well as various scenarios of potential levels and timing of GHG emissions, to evaluate the causes of changes already observed and to project future changes in temperature and other climate conditions (Meehl *et al*. 2007, entire; Ganguly *et al*. 2009, pp. 11555, 15558; Prinn *et al*. 2011, pp. 527, 529). All combinations of models and emissions scenarios yield very similar projections of increases in the most common measure of climate change, average global surface temperature (commonly known as global warming), until about 2030. Although projections of the magnitude and rate of warming differ after about 2030, the overall trajectory of all the projections is one of increased global warming through the end of this century, even for the projections based on scenarios that assume that GHG emissions will stabilize or decline. Thus, there is strong scientific support for projections that warming will continue through the 21st century, and that the magnitude and rate of change will be influenced substantially by the extent of GHG emissions (IPCC 2007a, pp. 44–45; Meehl *et al*. 2007, pp. 760–764 and 797– 811; Ganguly *et al*. 2009, pp. 15555– 15558; Prinn *et al*. 2011, pp. 527, 529) (also see IPCC 2007b, p. 8, for a summary of other global projections of climate-related changes, such as frequency of heat waves and changes in precipitation; and IPCC 2011 (entire) for a summary of observations and projections of extreme climate events).

Various changes in climate may have direct or indirect effects on species. These effects may be positive, neutral, or negative, and they may change over time, depending on the species and other relevant considerations, such as interactions of climate with other variables (e.g., habitat fragmentation) (IPCC 2007, pp. 8–14, 18–19). Identifying

likely effects often involves aspects of climate change vulnerability analysis. Vulnerability refers to the degree to which a species (or system) is susceptible to, and unable to cope with, adverse effects of climate change, including climate variability and extremes. Vulnerability is a function of the type, magnitude, and rate of climate change and variation to which a species is exposed, its sensitivity, and its adaptive capacity (IPCC 2007a, p. 89; see also Glick *et al*. 2011, pp. 19–22). There is no single method for conducting such analyses that applies to all situations (Glick *et al*. 2011, p. 3). We use our expert judgment and appropriate analytical approaches to weigh relevant information, including uncertainty, in our consideration of various aspects of climate change.

Current climate change projections for terrestrial areas in the Northern Hemisphere indicate warmer air temperatures, more intense precipitation events, and increased summer continental drying (Field *et al*. 1999, pp. 1–3; Hayhoe *et al*. 2004, p. 12422; Cayan *et al*. 2005, p. 6; IPCC 2007, p. 1181). Climate change may lead to increased frequency and duration of severe storms and droughts (McLaughlin *et al*. 2002, p. 6074; Cook *et al*. 2004, p. 1015; Golladay *et al*. 2004, p. 504). Climate projections for smaller subregions such as California remain uncertain. However, modeling of hydrological responses to potential climate change in the San Joaquin watershed suggests that the hydrological system is very sensitive to climatic variations on a monthly and annual basis, with changes in crop phenology and water use suggested (Ficklin *et al*. 2009, pp. 25–27).

Use of downscaled climate modeling for the Sacramento-San Joaquin River Basin shows projected warming, with substantial decadal and interannual variability and altered streamflow seasonality in the southern San Joaquin Valley, suggesting that water infrastructure modifications would be needed to address changing conditions (Vanrheenen *et al*. 2004, pp. 1, 265–279). Due to the Buena Vista Lake shrew's reliance on dense riparian vegetation and adequate moisture in wetland areas, either increased drying of its home range or changes in water delivery practices that reduce water runoff could negatively affect the shrew, while increases in runoff could benefit the shrew. Regardless of the uncertainty of the specific effects of climate change on the Beuna Vista Lake shrew, the current information does point to the general negative effects of areas being dryer and more unpredictable as far as precipitation and water availability. As a result, the effects of climate change overall will most likely be negative for the shrew and its habitat.

Primary Constituent Elements for the Buena Vista Lake Shrew

Under the Act and its implementing regulations, we are required to identify the physical or biological features essential to the conservation of the shrew in areas occupied at the time of listing, focusing on the features' primary constituent elements. Primary constituent elements are those specific elements of the physical or biological features that provide for a species' life-history processes and are essential to the conservation of the species.

Based on our current knowledge of the physical or biological features and habitat characteristics required to sustain the species' life-history processes, we determine that the primary constituent elements specific to the shrew are:

Permanent and intermittent riparian or wetland communities that contain:

- A complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation. Associated plant species can include, but are not limited to, Fremont cottonwoods, willows, glasswort, wild-rye grass, and rush grass. Although moist soil in areas with an overstory of willows or cottonwoods appears to be favored, such overstory may not be essential.
- Suitable moisture supplied by a shallow water table, irrigation, or proximity to permanent or semipermanent water; and
- A consistent and diverse supply of prey. Although the specific prey species used by the Buena Vista Lake shrew have not been identified, ornate shrews are known to eat a variety of terrestrial and aquatic invertebrates, including amphipods, slugs, and insects.

*Special Management Considerations or Protections*

When designating critical habitat, we assess whether specific areas within the geographical area occupied by the species at the time of listing contain features that are essential to the conservation of the species and which may require special management considerations or protection (16 U.S.C. 1536(3)(5)(A)(i)).

All designated critical habitat units will require some level of management to address the current and future threats to the physical and biological features essential to the conservation of the Buena Vista Lake shrew. Special management considerations or protection may be required to minimize habitat destruction, degradation, or fragmentation associated with such threats as the following: Changes in the water supply allocations, water diversions, flooding, oil and gas extraction, nonnative vegetation, and agriculture. For example, the Coles Levee area is within the boundaries of a proposed oil and gas exploration proposal. Agricultural pressures to convert land to agriculture remain in the southern San Joaquin Valley, with agricultural conversion to orchards noted to have occurred recently in the general area.

The designated units are located in areas characterized by large-scale agricultural production, and consequently, the units may be exposed to a number of pesticides, which could detrimentally impact the species. The Buena Vista Lake shrew currently exists on small remnant patches of natural habitat in and around the margins of a landscape that is otherwise dominated by agriculture. The Buena Vista Lake shrew could be indirectly exposed to pesticides from drift during spraying of crops where pesticide application measures to prevent drift are not followed, or potentially directly exposed during herbicide treatment of canal zones and ditch banks, wetland or riparian edges, or roadsides where shrews might exist. Reduced reproduction in Buena Vista Lake shrews could be directly caused by pesticides ingested through grooming, and secondarily from feeding on contaminated insects (Sheffield and Lochmiller 2001, p. 284). A variety of toxicants, including pesticides and heavy metals, have been shown to negatively affect

insectivores, including shrews, that have a high basal metabolism and tight energy balance. Treatment-related decreases in invertebrate prey availability may be especially significant to such insectivore populations (Ma and Talmage 2001, pp. 133–152).

The Buena Vista Lake shrew also faces high risks from random catastrophic events (such as floods or drought) (Service 1998, p. 163). The low numbers of Buena Vista Lake shrews located in small isolated areas increases the risk of a random catastrophic event eliminating entire populations or severely diminishing Buena Vista Lake shrew numbers to the point that recovery is precluded. These threats and others mentioned above could render the habitat less suitable for the Buena Vista Lake shrew by washing away leaf litter and complex vegetation structure (floods) or drying wetland habitat so that vegetative and prey communities die (drought), and special management may be needed to address these threats.

In summary, the critical habitat units identified in this designation may require special management considerations or protection to provide a functioning hydrological regime to maintain the requisite riparian and wetland habitat, which is essential in providing the space and cover necessary to sustain the entire life-cycle needs of the shrew, as well as its invertebrate prey. Changes in water supply could result in the alteration of the moisture regime, which could lead to reduced water quality or hydroperiod, loss of suitable invertebrate supply for feeding, and loss of complex vegetative structure for cover. The units may also require special management considerations due to ongoing pressures for agricultural conversion and oil and gas

exploration, and pesticide use, and vulnerabilities associated with low population size and population fragmentation.

*Criteria Used To Identify Critical Habitat*

As required by section 4(b)(2) of the Act, we used the best scientific data available to designate critical habitat. We reviewed available information pertaining to the habitat requirements of this species. We designated units based on their possession of sufficient elements of physical or biological features being present to support the shrew's life processes.

In accordance with the Act and its implementing regulation at 50 CFR 424.12(e), we considered whether designating additional areas—outside those occupied at the time of listing—would be necessary to ensure the conservation of the species. At the time of listing, we were aware of four locations (Kern Lake, Kern National Wildlife Refuge, Coles Levee, and the Kern Fan Water Recharge Area) where the Buena Vista Lake shrew was extant, but we also noted that additional remnant patches of wetland and riparian habitat within the Tulare Basin had not been surveyed and might support the shrew (67 FR 10101, 10103). We considered the geographical area occupied by the species to include all areas of remnant wetland and riparian habitat within the Tulare Basin. Shrews were also known from Atwell Island, Tulare County (Williams and Harpster 2001, pp. 13, 14), but had not been identified as Buena Vista Lake shrews at that time. In January 2003, a fifth site, Goose Lake, was surveyed and Buena Vista Lake shrews were also identified at this location (ESRP 2004, p. 8). The Goose Lake Unit was included in the

original proposal to designate critical habitat (69 FR 69578). The Lemoore and Semitropic sites were first surveyed for the Buena Vista Lake shrew in April 2005, and Buena Vista Lake shrews were captured at these sites (ESRP 2005, p. 11, 12).

We are only designating areas within the geographical area occupied by the species at the time of listing in 2002. We include as occupied those areas that meet the following two conditions: (1) They contain the physical or biological features that are essential to the conservation of the species, and (2) they were identified as occupied in the original listing documents or later confirmed to be occupied after 2002.

We consider critical habitat units in which shrews were first found after 2002 (units 2, 6 and 7) to have been occupied at time of listing, because the likelihood of dispersal to such areas after listing is very low, and because no surveys had been conducted in those areas prior to listing. Shrews, in general, have small home ranges in which they spend most of their lives, and generally exhibit a high degree of site-attachment. Males and juveniles of some species have been documented to disperse during the breeding season, with movement within a season varying between species from under 10 feet (a few meters) to, in one case, documented movement of 0.5 mi (800 meters) within a year (Churchfield 1990, pp. 55, 56). Because shrews generally only live a single year, half a mile would be the most we would reasonably expect a group of shrews (or a pregnant female) to disperse. No critical habitat unit is in such close proximity to other units or occupied areas. Accordingly, any shrew populations found in a given unit after listing can be assumed to have been present in those areas prior to

listing, barring evidence to the contrary such as prelisting surveys. All proposed units retain wetland or riparian features and are within the Tulare Basin, the described historical range of the Buena Vista Lake shrew.

We identified the designated lands based on the presence of the primary constituent elements described above, coupled with occupancy by the shrew (as established by sighting of shrews at the location). These criteria yielded seven units, which we proposed for designation on July 10, 2012 (77 FR 40706). As discussed above, the only occupied site not proposed for designation was Atwell Island, because of its lack of the physical or biological features determined to be essential to the conservation of the species. Because we consider all designated units to have been occupied at the time of listing, we consider them to meet all the first prong of the Act's definition of critical habitat (16 U.S.C. (3)(5)(A)(i), see **Background** section above).

We also consider all such designated areas to be essential for the conservation of the shrew. Within the historical range of the shrew, these seven units represent the only known remaining areas that contain both extant shrew populations and the PCEs on which the conservation of those populations depends. Additionally, by protecting a variety of habitats and conditions that contain the PCEs, we will increase the ability of the shrew to survive stochastic environmental events (fire, drought, or flood), or demographic (low recruitment), or genetic (inbreeding) problems. Suitable habitat within the historical range is limited, although conservation of substantial areas of remaining habitat in the Semitropic area is expected to benefit the shrew. Remaining habitats are

vulnerable to both anthropogenic and natural threats. Also, these areas provide habitats essential for the maintenance and growth of self-sustaining populations of shrews throughout their range. Because all the units are essential to the conservation of the shrew, any units that may subsequently be determined to have been unoccupied at time of listing (based on new information, for instance), will continue to function as critical habitat under the second prong of the Act's critical habitat definition (16 U.S.C. (3)(5)(A)(ii)).

*Methodology Overview*

As required by section 4(b)(2) of the Act and regulations at 50 CFR 424.12, we used the best scientific and commercial data available to determine the specific areas within the geographical area occupied by the species at the time of listing, on which are found those physical and biological features that are essential to the conservation of the shrew and which may require special management. This included data and information contained in, but not limited to, the proposed and final rules listing the shrew (65 FR 35033, June 1, 2000; 67 FR 10101, March 6, 2002); the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998); the original proposed critical habitat designation (69 FR 51417, August 19, 2004); the 5-year status review for the shrew (Buena Vista Lake Ornate Shrew 5-Year Review: Summary and Evaluation, Service 2011); research and survey observations published in peer-reviewed articles (Grinnell 1932, 1933; Hall 1981; Owen and Hoffman 1983; Williams and Kilburn 1984; Williams 1986; Maldonado *et al*. 2001; and Maldonado *et al*. 2004); habitat and wetland

mapping and other data collected and reports submitted by biologists holding section 10(a)(1)(A) recovery permits; biological assessments provided to us through section 7 consultations; reports and documents that are on file in our field office (Center for Conservation Biology 1990; Maldonado *et al*. 1998; ESRP 1999; ESRP 2004; ESRP 2005; and Maldonado 2006); personal discussions with experts inside and outside of our agency with extensive knowledge of the shrew and habitat in the area; and information received during all previous comment periods.

The five critical habitat units that we originally proposed were delineated by creating roughly defined areas for each unit by screen-digitizing polygons (map units) using ArcView (Environmental Systems Research Institute, Inc. (ESRI)), a computer Geographic Information System (GIS) program. The polygons were created by overlaying current and historical species location points (California Natural Diversity Database (CNDDB) 2004), and mapped wetland habitats (California Department of Water Resources 1998) or other wetland location information, onto SPOT imagery (satellite aerial photography) (CNES/SPOT Image Corporation 1993– 2000) and Digital Ortho-rectified Quarter Quadrangles (DOQQs) (USGS 1993–1998) for areas containing the Buena Vista Lake shrew. We utilized GIS data derived from a variety of Federal, State, and local agencies, and from private organizations and individuals. To identify where essential habitat for the shrew occurs, we evaluated the GIS habitat mapping and species occurrence information from the CNDDB (2004). We presumed occurrences identified in CNDDB to be extant unless there was affirmative documentation that an occurrence had been extirpated. We also relied on unpublished species occurrence data

contained within our files, including section 10(a)(1)(A) reports and biological assessments, on site visits, and on visual habitat evaluation in areas known to have shrews, and in areas within the historical ranges that had potential to contain shrew habitat.

For the five units, the polygons of identified habitat were further evaluated. Several factors were used to more precisely delineate the proposed critical habitat units from within these roughly defined areas. We reviewed any information in the Recovery Plan for Upland Species of the San Joaquin Valley, California (Service 1998), other peer-reviewed literature or expert opinion for the shrew to determine if the designated areas would meet the species' needs for conservation and whether these areas contained the appropriate primary constituent elements. We refined boundaries using satellite imagery, soil type coverages, vegetation land cover data, and agricultural or urban land use data to eliminate areas that did not contain the appropriate vegetation or associated native plant species, as well as features such as cultivated agriculture fields, development, and other areas that are unlikely to contribute to the conservation of the shrew.

For the revision of the Coles Levee Unit, and the addition of the Lemoore and Semitropic Units, we used shrew occurrence data collected by ESRP (Maldonado 2006, pp. 24–27; Phillips 2011), projected data within ArcView (ESRI), and delineated unit polygons. The polygons were created by overlaying species location points (Phillips 2011) onto NAIP imagery (aerial photography) (National Agriculture Imagery Program 2012) to identify wetland and vegetation features, such as vegetated canals, canals with

cleared vegetation, vegetated sloughs, agricultural fields, and general changes in vegetation and land type. We also projected the original proposed units onto NAIP imagery and again used additional GIS data derived from a variety of Federal, State, and local agencies.

When determining critical habitat boundaries within this final rule, we made every effort to avoid including developed areas such as lands covered by buildings, pavement, and other structures because such lands lack physical or biological features for the shrew. The scale of the maps we prepared under the parameters for publication within the Code of Federal Regulations may not reflect the exclusion of such developed lands. Any such lands inadvertently left inside critical habitat boundaries shown on the maps of this final rule have been excluded by text in the rule and are not designated as critical habitat. Therefore, a Federal action involving these lands will not trigger section 7 consultation with respect to critical habitat and the requirement of no adverse modification unless the specific action would affect the physical or biological features in the adjacent critical habitat.

The critical habitat designation is defined by the map or maps, as modified by any accompanying regulatory text, presented at the end of this document in the rule portion. We include more detailed information on the boundaries of the critical habitat designation in the preamble of this document. We will make the coordinates or plot points or both on which each map is based available to the public on *http://www.regulations.gov* at Docket No. FWS–R8–ES–2009–0062, on our Internet sites *http://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0DV*, and at the

field office responsible for the designation (**see FOR FURTHER INFORMATION CONTACT** above).

**Final Critical Habitat Designation**

We are designating six units as critical habitat for the Buena Vista Lake shrew. The critical habitat areas described below constitute our best assessment at this time of areas that meet the definition of critical habitat. Those six units are: (1) Kern National Wildlife Refuge Unit, (2) Goose Lake Unit, (4) Coles Levee Unit, (5) Kern Lake Unit, (6) Semitropic Ecological Reserve Unit, and (7) Lemoore Wetland Reserve Unit. Note that proposed Unit 3 (the Kern Fan Water Recharge Unit) has been excluded from final designation due to the existing habitat conservation plan (see **Exclusions**, below). All units are occupied by the subspecies.

Table 1. Critical habitat units for the Buena Vista Lake shrew.

[Area estimates reflect all land within critical habitat unit boundaries.]

| Critical Habitat Unit | Size of Area in Acres (Hectares) | | | | |
|---|---|---|---|---|---|
| | Total | Federal | State | Local | Private |
| 1. Kern National Wildlife Refuge Unit | | | | | |
| Subunit 1A | 274 (111) | 274 (111) | | | |
| Subunit 1B | 66 (27) | 66 (27) | | | |
| Subunit 1C | 47 (19) | 47 (19) | | | |
| 2. Goose Lake Unit | | | | | |
| Subunit 2A | 159 (64) | | | | 159 (64) |

| | | | | | |
|---|---|---|---|---|---|
| Subunit 2B | 1,115 (451) | | | | 1,115 (451) |
| 4. Coles Levee Unit | 270 (109) | | 46 (19) | 6 (2) | 217 (88) |
| 5. Kern Lake Unit | | | | | |
| Subunit 5A | 34 (14) | | | | 34 (14) |
| Subunit 5B | 51 (21) | | | | 51 (21) |
| 6. Semitropic Ecological Reserve Unit | 372 (151) | | 345 (140) | | 27 (11) |
| 7. Lemoore Wetland Reserve Unit | 97 (39) | | | | 97 (39) |
| Total | 2,485 (1,006) | 387 (157) | 391 (159) | 6 (2) | 1,700 (688) |

Note: Area sizes may not sum due to rounding.

We present brief descriptions of all units, and reasons why they meet the definition of critical habitat for the Buena Vista Lake shrew, below.

*Unit 1: Kern National Wildlife Refuge Unit*

Unit 1 consists of a total of approximately 387 ac (157 ha). The Kern NWR Unit is completely comprised of Federal lands, and is located within the Kern NWR in northwestern Kern County. The Kern NWR Critical Habitat Unit consists of three subunits: Subunit 1A is approximately 274 ac (111 ha); subunit 1B is 66 ac (27 ha); and subunit 1C is 47 ac (19 ha). The unit was occupied at the time of listing, is currently occupied, and contains the physical and biological features that are essential to the conservation of the shrew. Shrew habitat in Unit 1 receives water from the California Aqueduct. One of the areas where Buena Vista Lake shrews are present has standing water from September 1 through approximately April 15. After that time, the trees in the area may receive irrigation water so the area may possibly remain damp through May,

but the area is dry for approximately 3 months during the summer. Another area of known Buena Vista Lake shrew occurrences has standing water from the second week of August through the winter and into early July, and is only dry for a short time during the summer. Buena Vista Lake shrew have been captured in remnant riparian and slough habitat at the Refuge (Service 2005, pp. 48, 49).

Like all the critical habitat units we are designating here (see *Criteria Used to Designate Critical Habitat*, above), this unit is essential to the conservation of the shrew because it is occupied, and because the subunits include riparian habitat that contain the appropriate physical or biological features and primary constituent elements for the shrew. *Populus fremontii* trees (Fremont cottonwood) and *Salix spp*. (willow) are the dominant woody plants in riparian areas. Additional plants include bulrushes, cattails, *Juncus spp*. (rushes), *Heleocharis palustris* (spike rush), and *Sagittaria longiloba* (arrowhead). Other plant communities on the refuge that support shrews are valley iodine bush scrub, dominated by iodine bush, seepweed, *Frankenia salina* (alkali heath), and salt-cedar scrub, which is dominated by *Tamarix spp*. (salt cedar). Both of these communities occupy sites with moist, alkaline soils.

The Kern NWR completed a Comprehensive Conservation Plan (CCP) for the Kern and Pixley NWRs in February 2005 (Service 2005, pp. 1–103). The CCP provides objectives for maintenance and restoration of Buena Vista Lake shrew habitat on the Kern NWR. Objectives listed in the CCP include: completing baseline censuses and monitoring for the shrew; enhancement and maintenance of the 215-ac (87-ha) riparian

habitat through regular watering to provide habitat for riparian species including the shrew; and additional restoration of 15 ac (6 ha) of riparian habitat along canals in a portion of the Refuge to benefit the shrew and riparian bird species (Service 2005, pp. 84, 85). The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from nonnative species such as salt cedar, and from changes in hydrology due to offsite water management.

*Unit 2: Goose Lake Unit*

The Goose Lake Unit consists of a total of approximately 1,274 ac (515 ha) of private land, and is located about 10 mi (16 km) south of Kern NWR in northwestern Kern County, in the historical lake bed of Goose Lake. The Goose Lake Unit consists of two subunits: Subunit 2A contains 159 ac (64 ha), and Subunit 2B contains 1,115 ac (451 ha). We consider that the unit was occupied at the time of listing and assume that it was not identified as occupied at that time because it had not yet been surveyed for small mammals. In January 2003, when the area was first surveyed for small mammals, approximately 6.5 ac (2.6 ha) of potential shrew habitat located along the Goose Lake sloughs were surveyed (ESRP 2004, p. 8), resulting in the capture of five Buena Vista Lake shrews. The maximum distance between two shrew captures was 1.6 mi (2.6 km), suggesting that Buena Vista Lake shrews are widely distributed on the site. The unit has been determined to have the necessary physical or biological features present and

therefore meets the definition of critical habitat under section 3(5)(A)(i) of the Act. The unit was included in the 2004 proposed critical habitat designation.

Although we continue to presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act (prong 1), we are also designating the unit under section 3(5)(A)(ii) of the Act (prong 2). As discussed above under *Criteria Used To Identify Critical Habitat,* even if subsequent evidence were to indicate that the unit was not occupied at the time of listing, it would remain critical habitat under the second prong of the Act's definition. The unit is essential for the conservation of the shrew because it is among the very few remaining areas that support both an extant shrew population and the physical and biological features necessary to conserve that population.

In the past, Buena Vista Lake shrew habitat in this unit experienced widespread losses due to the diversion of water for agricultural purposes. However, small, degraded examples of freshwater marsh and riparian communities still exist in the area of Goose Lake and Jerry Slough (a portion of historical Goose Slough, an overflow channel of the Kern River), allowing shrews to persist in the area. Dominant vegetation along the slough channels includes frankenia, iodine bush, and seepweed. The northern portion of the unit consists of scattered mature iodine bush shrubs in an area that has relatively moist soils. The southern portion of the unit is characterized by a dense mat of saltgrass and clumps of iodine bush and seepweed. A portion of the unit currently exhibits inundation and saturation during the winter months. Dominant vegetation in these areas has included cattails, bulrushes, and saltgrass.

The area consisting of the former bed of Goose Lake is managed by the Semitropic Water Storage District (WSD) as a ground-water recharge basin. Water from the California Aqueduct is transferred to the Goose Lake area in years of abundant water, where it is allowed to recharge the aquifer that is used for irrigated agriculture. At the time that the unit was originally proposed, the landowners, in cooperation with Ducks Unlimited, Inc. and Semitropic WSD, proposed to create and restore habitat for waterfowl in the unit area; wetland restoration that we expected to substantially increase the quantity and quality of Buena Vista Lake shrew habitat on the site. Restoration activities were completed in the last 6 years. The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from nonnative species such as salt cedar, from recreational use, and from changes in hydrology due to water management and maintenance of water conveyance facilities. No conservation agreements currently cover this land.

*Unit 3: Kern Fan Recharge Unit*

The Kern Fan Recharge Unit was excluded under section 4(b)(2) of the Act. See **Exclusions** section below.

*Unit 4: Coles Levee Unit*

The Coles Levee Unit is approximately 270 ac (109 ha) in Kern County, of which 217 ac (88 ha) is owned by Aera Energy. An additional 46 ac (19 ha) are State lands within the Tule Elk Reserve, and 6 ac (2 ha) are part of a Kern County park. The unit is located northeast of Tupman Road near the town of Tupman, is directly northeast of the California Aqueduct, and is largely within the Coles Levee Ecosystem Preserve, which was established as a mitigation bank in 1992, in an agreement between Atlantic Richfield Company (ARCO) and CDFW. The preserve serves as a mitigation bank to compensate for the loss of habitat for listed upland species; the Buena Vista Lake shrew is not a covered species. ARCO had been issued an incidental take permit under section 10(a)(1)(B) of the Act for the Coles Levee Ecological Preserve Area (Service 2001, p. 1). However, the take authorization provided by the permit lapsed when ARCO sold the property to the current owner and the permit was not transferred. Habitat on the preserve consists mostly of highly degraded upland saltbush and mesquite scrub, and is interlaced with slough channels for the historical Kern River fan where the river entered Buena Vista Lake from the northeast. Most slough channels are dry except in times of heavy flooding. This site runs parallel to the Kern River bed and contains approximately 2 mi (3.2 km) of much-degraded riparian vegetation along the Kern River.

A manmade pond, which was constructed in the late 1990s or early 2000s, is located within the unit. Water from the adjacent oil fields is constantly pumped into the basin. Vegetation includes bulrushes, *Urtica dioica* (stinging nettle), *Baccharis salicifolia* (mulefat), salt grass, *Atriplex lentiformis* (quailbush), and *Conium maculatum* (poison hemlock). A few willows and Fremont cottonwoods are scattered throughout the

area.

In the 2009 proposed rule (74 FR 53999. October 21, 2009), we reproposed 214 ac (87 ha) of critical habitat as the Coles Levee Unit. In this unit, Buena Vista Lake shrews were originally captured along a nature trail that was adjacent to a slough, and were close to the water's edge where there was abundant ground cover but little or no canopy cover. The unit is delineated in a general southeast to northwest direction, along both sides of the Kern River Flood Channel and Outlet Canal, which runs through the Preserve. During a construction project in the summer of 2011, two Buena Vista Lake shrews were found just north of the previous northerly boundary of the unit. We have therefore extended the unit boundary along both sides of the canal to encompass the contiguous riparian habitat to the point where water is no longer retained and riparian vegetation essentially stops, thereby including riparian habitat along the Outlet Canal within the Tule Elk Reserve.

This unit is essential to the conservation of the species because it was occupied at the time of listing (67 FR 10102), is considered currently occupied, and includes willow-cottonwood riparian habitat that contains the PCEs. The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from construction activities associated with projects to tie-in water conveyance facilities to the California Aqueduct and oil and gas-related activities, including pipeline projects. The area adjacent to Coles Levee is a site of active gas and oil production, and the Coles Levee Unit is within an area that was

recently proposed for additional oil and gas exploration.

*Unit 5: Kern Lake Unit*

The Kern Lake Unit is approximately 85 ac (35 ha) in size, and is located at the edge of the historical Kern Lake, approximately 16 miles south of Bakersfield in southwestern Kern County. This unit lies between Hwy 99 and Interstate 5, south of Herring Road near the New Rim Ditch. The Kern Lake Unit consists of two subunits: Subunit 5A contains 34 ac (14 ha), and Subunit 5B contains 51 ac (21 ha). The unit was occupied at the time of listing, is considered currently occupied, and contains the physical and biological features that are essential to the conservation of the Buena Vista Lake shrew. Since the advent of reclamation and development, the surrounding lands have seen intensive cattle and sheep ranching and, more recently, cotton and alfalfa farming. Currently, Kern Lake itself is generally a dry lake bed; however, the unit contains wet alkali meadows and a spring-fed pond known as "Gator Pond," which is located near the shoreline of the lake bed. A portion of the runoff from the surrounding hills travels through underground aquifers, surfacing as artesian springs at the pond. The heavy clay soils support a distinctive assemblage of native species, providing an island of native vegetation situated among agricultural lands. The unit contains three ecologically significant natural communities: freshwater marsh, alkali meadow, and iodine bush scrub.

This unit is essential to the conservation of the species because it is currently occupied and includes habitat that contains the PCEs identified for the shrew. The Kern

Lake area was formerly managed by the Nature Conservancy for the J.G. Boswell Company, and was once thought to contain the last remaining population of the Buena Vista Lake shrew.

The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from reductions in water delivery, from effects of surrounding agricultural use, and from industrial and commercial development. This area does not have a conservation easement and is managed by the landowners. We are unaware of any plans to develop this site; however, it is within a matrix of lands managed for agricultural production.

*Unit 6: Semitropic Ecological Reserve Unit*

The Semitropic Ecological Reserve Unit is approximately 372 ac (151 ha) in size and is located about 7 mi (11 km) south of Kern NWR and 7 mi (11 km) north of the Goose Lake Unit along the Main Drain Canal in Kern County. It is bordered on the south by State Route 46, approximately 2 mi (3 km) east of the intersection with Interstate 5. The CDFW holds 345 ac (140 ha) under fee title, and manages the area as part of the Semitropic Ecological Reserve. An additional 27 ac (11 ha) of the unit are private land.

We consider that the unit was occupied at the time of listing and assume that it was not identified as occupied at that time because it had not yet been surveyed for small mammals (see Criteria Used To Identify Critical Habitat). Buena Vista Lake shrews

were identified in the unit on April 27, 2005, when it was first surveyed for small mammals (ESRP 2005, pp. 10–13). At that time, Buena Vista Lake shrews were found in the southwestern portion of the unit, next to the Main Drain Canal. The unit has been determined to have the necessary PCEs present and therefore meets the definition of critical habitat under section 3(5)(A)(i) of the Act. Although we presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act, we are also designating the unit under section 3(5)(A)(ii) of the Act. Even if the unit was not occupied at the time of listing, it is essential for the conservation of the Buena Vista Lake shrew due to its location approximately midway between Units 1 and 2, and location near the southern edge of remnant natural wetland and riparian habitat. The unit is also essential for the conservation of the shrew because it is considered to be currently occupied, and contains a matrix of riparian and wetland habitat, including riparian habitat both along the canal and within and adjacent to oxbow and slough features.

The major vegetative associations at the site are valley saltbush scrub and valley sink scrub. Valley saltbush scrub is found within the relatively well-drained soils at slightly higher elevations, and the valley sink scrub is found in the heavier clay soils. Dominant vegetation at the site includes *Bromus diandrus* (ripgut brome), *Bromus madritensis ssp. rubens* (red brome), *Carex spp*. (sedges), *Juncus spp*. (rushes), *Polygonum spp*. (knotweed), *Polypogon monspeliensis* (rabbitfoot grass), *Rumex crispus* (curly dock), and *Vulpia myuros* (foxtail fescue). There is a light overstory of cottonwoods at the trapping location where the most Buena Vista Lake shrews have been observed.

The physical and biological features essential to the conservation of the species in this unit may require special management considerations or protection to address threats from ongoing oil and gas exploration and development, ongoing conversion of natural lands for agricultural development, changes in water management, weed control activities including use of herbicides, and the occurrence of range trespass in an open range area. Semitropic reserve lands are not fenced and are subject to occasional range trespass by sheep and cattle (CDFW 2012). State lands in the unit were acquired under the provisions of the Metro Bakersfield Habitat Conservation Plan (HCP), and are managed for listed upland species. Location of the Main Drain Canal in the unit, and the presence of wetland features are expected to benefit the shrew, although the shrew is not a covered species under the HCP. The State does not yet have a management plan for the Semitropic Ecological Reserve.

*Unit 7: Lemoore Wetland Reserve Unit*

The Lemoore Wetland Reserve Unit, 97 ac (39 ha) in size, is located east of the Lemoore Naval Air Station and is 4 mi (6 km) west of the City of Lemoore in Kings County. The unit is bounded along the southern border by State Route 198, and on the north and west sides by a bare water-conveyance canal. The unit is managed by the Natural Resources Conservation Service for waterfowl enhancement.

We consider that the unit was occupied at the time of listing and that it was not

identified as occupied at that time because it had not yet been surveyed for small mammals (see *Criteria Used To Identify Critical Habitat*). Buena Vista Lake shrews were identified in the unit in April 2005, when it was first surveyed for small mammals (ESRP 2005, pp. 10–13). The unit has been determined to have the necessary PCEs present and, therefore, meets the definition of critical habitat under section 3(5)(A)(i) of the Act. Although we presume that the unit meets the definition of critical habitat under section 3(5)(A)(i) of the Act, we are also designating the unit under section 3(5)(A)(ii) of the Act. The unit is essential for the conservation of the shrew due to its location at the northernmost extent of the subspecies' range and its geographic isolation from other units, due to occupancy, and due to remnant natural wetland and riparian habitat that contains the PCEs.

The site is part of an area that was created to provide a place for city storm water to percolate and drop potential contaminants to shield the Kings River during years of flood runoff. Portions of the area are flooded periodically, forming fragmented wetland communities throughout the area.

The plant communities of the Lemoore Wetland Reserve Unit include a mixture of vegetation communities: nonnative grassland, vernal marsh, and elements of valley sink scrub. Commonly occurring plants include *Brassica nigra* (black mustard), red brome, *B. hordeaceus* (soft chess), saltgrass, alkali heath, rushes, *Lactuca serriola* (prickly lettuce), rabbitfoot grass, cottonwood, *Rumex crispus* (curly dock), *Salix ssp.* (willow), *Scirpus ssp*. (bulrush), *Sonchus oleraceus* (common sowthistle), cattails, foxtail

fescue and *Xanthium strumarium* (cocklebur). This unit is essential to the conservation of the species because it is currently occupied and contains the PCEs identified for the shrew.

**Effects of Critical Habitat Designation**

*Section 7 Consultation*

Section 7(a)(2) of the Act requires Federal agencies, including ourselves, to ensure that any action they fund, authorize, or carry out is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of designated critical habitat of such species. In addition, section 7(a)(4) of the Act requires Federal agencies to confer with us on any agency action which is likely to jeopardize the continued existence of any species proposed to be listed under the Act or result in the destruction or adverse modification of proposed critical habitat.

Decisions by the 5th and 9th Circuit Courts of Appeals have invalidated our regulatory definition of "destruction or adverse modification" (50 CFR 402.02) (see *Sierra Club* v. *U.S. Fish and Wildlife Service et al*., 245 F.3d 434, 442 (5th Cir. 2001) and *Gifford Pinchot Task Force* v. *U.S. Fish and Wildlife Service*, 378 F. 3d 1059 (9th Cir. 2004)), and we do not rely on this regulatory definition when analyzing whether an action is likely to destroy or adversely modify critical habitat. Under the statutory provisions of the Act, we determine destruction or adverse modification on the basis of whether, with

implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species.

If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency (action agency) must enter into consultation with us. Examples of actions that are subject to the section 7 consultation process are actions on State, tribal, local, or private lands that require a Federal permit (such as a permit from the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (33 U.S.C. 1251 *et seq.*) or a permit from ourselves under section 10 of the Act) or that involve some other Federal action (such as funding from the Federal Highway Administration, Federal Aviation Administration, or the Federal Emergency Management Agency). Federal actions not affecting listed species or critical habitat, and actions on State, tribal, local, or private lands that are not federally funded or authorized, do not require section 7 consultation.

As a result of section 7 consultation, we document compliance with the requirements of section 7(a)(2) through our issuance of:

(1) A concurrence letter for Federal actions that may affect, but are not likely to adversely affect, listed species or critical habitat; or

(2) A biological opinion for Federal actions that may affect, and are likely to adversely affect, listed species or critical habitat.

When we issue a biological opinion concluding that a project is likely to jeopardize the continued existence of a listed species, or destroy or adversely modify

critical habitat, we provide reasonable and prudent alternatives for the project, if any are identifiable. The alternatives identify how the likelihood of jeopardy to the species, or destruction or adverse modification of critical habitat, may be avoided. We define "reasonable and prudent alternatives" (at 50 CFR 402.02) as alternative actions identified during consultation that:

(1) Can be implemented in a manner consistent with the intended purpose of the action,

(2) Can be implemented consistent with the scope of the Federal agency's legal authority and jurisdiction,

(3) Are economically and technologically feasible, and

(4) Would, in the Director's opinion, avoid the likelihood of jeopardizing the continued existence of the listed species or avoid the likelihood of destroying or adversely modifying critical habitat.

Reasonable and prudent alternatives can vary from slight project modifications to extensive redesign or relocation of the project. Costs associated with implementing a reasonable and prudent alternative are similarly variable.

Regulations at 50 CFR 402.16 require Federal agencies to reinitiate consultation on previously reviewed actions in instances where we have listed a new species or subsequently designated critical habitat that may be affected and the Federal agency has retained discretionary involvement or control over the action (or the agency's discretionary involvement or control is authorized by law). Consequently, Federal

agencies sometimes may need to request reinitiation of consultation with us on actions for which formal consultation has been completed, if those actions with discretionary involvement or control may affect subsequently listed species or designated critical habitat.

*Application of the "Adverse Modification" Standard*

The key factor related to the adverse modification determination is whether, with implementation of the proposed Federal action, the affected critical habitat would continue to serve its intended conservation role for the species. Activities that may destroy or adversely modify critical habitat are those that alter the essential physical or biological features to an extent that appreciably reduces the conservation value of critical habitat for the Buena Vista Lake shrew.

Section 4(b)(8) of the Act requires us to briefly evaluate and describe, in any proposed or final regulation that designates critical habitat, activities involving a Federal action that may destroy or adversely modify such habitat, or that may be affected by such designation. We list examples of such activities below. All such activities would also trigger consultation in the absence of critical habitat, as required by section 7(a)(2) of the Act, in order to avoid jeopardizing the continued existence of the subspecies. Activities that may affect critical habitat, when carried out, funded, or authorized by a Federal agency, should result in consultation for the shrew. These activities include, but are not limited to:

(1) Actions carried out, permitted or funded by Federal agencies that would affect the delivery of water to riparian or wetland areas within critical habitat. Such activities could include damming, diversion, and channelization. These activities could eliminate or reduce the habitat necessary for the reproduction, sheltering, or growth of Buena Vista Lake shrews.

(2) Groundbreaking activities within critical habitat, as carried out, permitted, or funded by Federal agencies. Such activities could include construction of roads or communication towers, Superfund site cleanup, and projects to control erosion or flooding. These activities could eliminate or reduce the complex vegetative structure, soil moisture, or prey base necessary for reproduction, sheltering, foraging, or growth of Buena Vista Lake shrews.

(3) Activities carried out, permitted, or funded by Federal agencies that could affect water quality within critical habitat, including the deposition of silt. Such activities could include placement of fill into wetlands or discharge of oil or other pollutants into streams. These activities could eliminate or reduce the habitat and prey base necessary for the reproduction, feeding, or growth of Buena Vista Lake shrews.

(4) Activities carried out on critical habitat designated on Federal lands (Unit 1) that could reduce the complex vegetative structure, soil moisture, or prey base of critical habitat. Such activities could include fire management actions or invasive species

removal. These activities could eliminate or reduce the habitat or prey base necessary for reproduction, sheltering, foraging, or growth of Buena Vista Lake shrews.

**Exemptions**

*Application of Section 4(a)(3) of the Act*

The Sikes Act Improvement Act of 1997 (Sikes Act) (16 U.S.C. 670a) required each military installation that includes land and water suitable for the conservation and management of natural resources to complete an integrated natural resources management plan (INRMP) by November 17, 2001. An INRMP integrates implementation of the military mission of the installation with stewardship of the natural resources found on the base. Each INRMP includes:

(1) An assessment of the ecological needs on the installation, including the need to provide for the conservation of listed species;

(2) A statement of goals and priorities;

(3) A detailed description of management actions to be implemented to provide for these ecological needs; and

(4) A monitoring and adaptive management plan.

Among other things, each INRMP must, to the extent appropriate and applicable, provide for fish and wildlife management; fish and wildlife habitat enhancement or modification; wetland protection, enhancement, and restoration where necessary to

support fish and wildlife; and enforcement of applicable natural resource laws.

The National Defense Authorization Act for Fiscal Year 2004 (Pub. L. 108-136) amended the Act to limit areas eligible for designation as critical habitat. Specifically, section 4(a)(3)(B)(i) of the Act (16 U.S.C. 1533(a)(3)(B)(i)) now provides: "The Secretary shall not designate as critical habitat any lands or other geographical areas owned or controlled by the Department of Defense, or designated for its use, that are subject to an integrated natural resources management plan prepared under section 101 of the Sikes Act (16 U.S.C. 670a), if the Secretary determines in writing that such plan provides a benefit to the species for which critical habitat is proposed for designation."

There are no Department of Defense lands within the proposed critical habitat designation. Therefore, we are not exempting lands from this final designation of critical habitat for the Buena Vista Lake shrew pursuant to section 4(a)(3)(B)(i) of the Act.

**Exclusions**

*Application of Section 4(b)(2) of the Act*

Section 4(b)(2) of the Act states that the Secretary shall designate and make revisions to critical habitat on the basis of the best available scientific data after taking into consideration the economic impact, national security impact, and any other relevant impact of specifying any particular area as critical habitat. The Secretary may exclude an

area from critical habitat if she determines that the benefits of such exclusion outweigh the benefits of specifying such area as part of the critical habitat, unless she determines, based on the best scientific data available, that the failure to designate such area as critical habitat will result in the extinction of the species. In making that determination, the statute on its face, as well as the legislative history, are clear that the Secretary has broad discretion regarding which factor(s) to use and how much weight to give to any factor.

In considering whether to exclude a particular area from the designation, we identify the benefits of including the area in the designation, identify the benefits of excluding the area from the designation, and evaluate whether the benefits of exclusion outweigh the benefits of inclusion. If the analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, the Secretary may exercise her discretion to exclude the area only if such exclusion would not result in the extinction of the species.

When identifying the benefits of inclusion for an area, we consider the additional regulatory benefits that area would receive from the protection from adverse modification or destruction as a result of actions with a Federal nexus; the educational benefits of mapping essential habitat for recovery of the listed species; and any benefits that may result from a designation due to State or Federal laws that may apply to critical habitat.

When identifying the benefits of exclusion, we consider, among other things, whether exclusion of a specific area is likely to result in conservation; the continuation,

strengthening, or encouragement of partnerships; or implementation of a management plan that provides equal to or more conservation than a critical habitat designation would provide.

In the case of the Buena Vista Lake shrew, the benefits of critical habitat include public awareness of the shrew's presence and the importance of habitat protection, and in cases where a Federal nexus exists, increased habitat protection for the shrew due to the protection from adverse modification or destruction of critical habitat.

When we evaluate the existence of a management plan when considering the benefits of exclusion, we consider a variety of factors, including but not limited to, whether the plan is finalized; how it provides for the conservation of the essential physical or biological features; whether there is a reasonable expectation that the conservation management strategies and actions contained in a management plan will be implemented into the future; whether the conservation strategies in the plan are likely to be effective; and whether the plan contains a monitoring program or adaptive management to ensure that the conservation measures are effective and can be adapted in the future in response to new information.

After identifying the benefits of inclusion and the benefits of exclusion, we carefully weigh the two sides to evaluate whether the benefits of exclusion outweigh those of inclusion. If our analysis indicates that the benefits of exclusion outweigh the benefits of inclusion, we then determine whether exclusion would result in extinction. If

exclusion of an area from critical habitat will result in extinction, we will not exclude it from the designation.

**Summary of Exclusions**

Based on the information provided by entities seeking exclusion, as well as additional public comments and information received, we evaluated whether certain lands in the proposed critical habitat (Units 2, 3, 4, and 7 in their entirety, and portions of Units 2, 3, 4, 5, and 7) were appropriate for exclusion from this final designation pursuant to section 4(b)(2) of the Act. We identified Unit 3 (Kern Fan Water Recharge Unit) in its entirety (2,687 ac (1,088 ha)) for exclusion from critical habitat designation for the shrew.

We are excluding this area because we believe that:

(1) Its value for conservation will be preserved for the foreseeable future by existing protective actions, and, therefore:

(2) It is appropriate for exclusion under the "other relevant impacts" provisions of section 4(b)(2) of the Act.

**Exclusions Based on Economic Impacts**

Under section 4(b)(2) of the Act, we consider the economic impacts of specifying any particular area as critical habitat. In order to consider economic impacts, we prepared a draft economic analysis (DEA) of the proposed critical habitat designation and

related factors (Industrial Economics (IEc) 2013a) (available at *http://www.regulations.gov*, Docket No. FWS–R8–ES–2009–0062). We then opened a public comment period announcing the availability of the DEA (78 FR 14245; March 5, 2013), and subsequently completed a final economic analysis (FEA) (IEc 2013b) (also available at *http://www.regulations.gov*, Docket No. FWS–R8–ES–2009–0062), on which we base our determination of economic exclusions.

The intent of the FEA is to quantify the economic impacts of all potential conservation efforts for the Buena Vista Lake shrew. Some of these costs will likely be incurred regardless of whether we designate critical habitat (baseline). The economic impact of the final critical habitat designation is analyzed by comparing scenarios both "with critical habitat" and "without critical habitat." The "without critical habitat" scenario represents the baseline for the analysis, considering protections already in place for the species (e.g., under the Federal listing and other Federal, State, and local regulations). The baseline, therefore, represents the costs incurred regardless of whether critical habitat is designated. The "with critical habitat" scenario describes the incremental impacts associated specifically with the designation of critical habitat for the species. The incremental conservation efforts and associated impacts are those not expected to occur absent the designation of critical habitat for the species. In other words, the incremental costs are those attributable solely to the designation of critical habitat above and beyond the baseline costs; these are the costs we consider in the final designation of critical habitat. The analysis looks retrospectively at baseline impacts

incurred since the species was listed, and forecasts both baseline and incremental impacts likely to occur with the designation of critical habitat.

The FEA also addresses how potential economic impacts are likely to be distributed, including an assessment of any local or regional impacts of habitat conservation and the potential effects of conservation activities on government agencies, private businesses, and individuals. The FEA measures lost economic efficiency associated with residential and commercial development and public projects and activities, such as economic impacts on water management and transportation projects, Federal lands, small entities, and the energy industry. Decisionmakers can use this information to assess whether the effects of the designation might unduly burden a particular group or economic sector. Finally, the FEA looks retrospectively at costs that have been incurred since 2002 (the year of the species' listing) (67 FR 10101), and considers those costs that may occur in the 20 years following the designation of critical habitat, which was determined to be the appropriate period for analysis because limited planning information was available for most activities to forecast activity levels for projects beyond a 20-year timeframe.

The FEA quantifies economic impacts of Buena Vista Lake shrew conservation efforts associated with various economic activities, including: (1) Water management; (2) agricultural production; and (3) energy development. Incremental impacts (attributable to critical habitat) are expected to result from the need for additional consultations between ourselves and other Federal agencies seeking to fund or permit new projects in

critical habitat units. The total estimated incremental economic impact for all areas proposed as revised critical habitat over the next 20 years is $130,000 ($11,000 annualized), assuming a 7 percent discount rate. More than half of those impacts ($79,000) are estimated to apply to Unit 3, which we are excluding based on an established habitat management plan for the area (see **Exclusions Based on Other Relevant Impacts** below). Please refer to the FEA for a comprehensive discussion of all potential impacts.

Because the impacts of critical habitat estimated by the FEA are relatively low, and not distributed in such a way as to unduly burden any particular area or group, the Secretary is not exercising her discretion to exclude any units based on economic impacts. A copy of the FEA with supporting documents may be obtained by contacting the Sacramento Fish and Wildlife Office (see **ADDRESSES**) or by downloading from the Internet at *www.regulations.gov*, (Docket No. FWS–R8–ES–2009–0062).

**Exclusions Based on National Security Impacts**

Under section 4(b)(2) of the Act, we consider whether there are lands owned or managed by the Department of Defense (DOD) where a national security impact might exist. We have determined that the lands within Buena Vista Lake shrew critical habitat units are not owned or managed by the Department of Defense, and, therefore, we anticipate no impact on national security. Consequently, the Secretary is not exercising her discretion to exclude any areas from this final designation based on impacts on

national security.

**Exclusions Based on Other Relevant Impacts**

Under section 4(b)(2) of the Act, we consider any other relevant impacts, in addition to economic impacts and impacts on national security. We consider a number of factors including whether the landowners have developed any HCPs or other management plans for the area, or whether any conservation partnerships would be encouraged by designation of, or exclusion from, critical habitat. In addition, we look at any tribal issues, and consider the government-to-government relationship of the United States with tribal entities. We also consider any social impacts that might occur because of the designation.

*Land and Resource Management Plans, Conservation Plans, or Agreements based on Conservation Partnerships*

We consider a current land management or conservation plan to provide adequate management or protection if it meets the following criteria:

(1) The plan is complete and provides the same or better level of protection from adverse modification or destruction than that provided through a consultation under section 7 of the Act;

(2) There is a reasonable expectation that the conservation management strategies and actions will be implemented for the foreseeable future, based on past practices, written guidance, or regulations; and

(3) The plan provides conservation strategies and measures consistent with currently accepted principles of conservation biology.

We consider the habitat management plan operated by the City of Bakersfield for the Kern Fan Water Recharge Area (Kern Fan Habitat Management Plan (HMP)) to fulfill the above criteria, and the Secretary is therefore excluding non-Federal lands covered by this plan (all of Unit 3) that provide for the conservation of the Buena Vista Lake shrew.

**Exclusions Under Section 4(b)(2) of the Act—Kern Fan Water Recharge Area**

Proposed Unit 3 is covered in its entirety by the Kern Fan Water Recharge Area, which is owned and operated by the City of Bakersfield. The Water Recharge Area consists of approximately 2,800 ac (1,133 ha) west of Bakersfield, on which the City spreads water, as available, from the Kern River and State Water Project (LOA 2004, p. 8). By spreading water over the Recharge Area, the City is able to buffer downstream flooding and allow for the recharge of underground aquifers. Water used in this fashion also supports the physical or biological features essential to the shrew. The City has worked closely with us since 2004 to develop and implement a habitat management plan (Kern Fan HMP) for the conservation of the shrew (LOA 2004, entire).

The Kern Fan HMP benefits the shrew in several ways. First, it incorporates several preexisting beneficial management practices, thereby making those practices more likely to persist, and giving us input regarding any future proposals to change them. The practices include limitation of public access to the site, cessation of livestock grazing, and maintenance of the site as open space left predominantly in its natural vegetative state (LOA 2004, pp. 20, 21). Second, it applies the results of a baseline habitat survey to establish priorities according to which available waters will be spread so as to most benefit the shrew (LOA 2004, pp. 22–24). Third, it establishes a monitoring program involving yearly habitat surveys (LOA 2004, pp. 25–27). And fourth, it incorporates adaptive management provisions by establishing goals for various areas and adjusting management to meet those goals as necessary (LOA 2004, pp. 24, 27–28). The plan requires monitoring results to be shared with us, and provides for yearly meetings between ourselves and the City to discuss adaptive management options (LOA 2004, p. 28).

The City of Bakersfield has carried out the terms of this plan since 2005 (LOA 2005, entire; LOA 2006, entire; LOA 2007, entire; LOA 2008, entire; LOA 2009, entire; LOA 2010, entire; LOA 2012a, entire; LOA 2012b, entire). In 2011, with our input, the City proposed an addendum, referred to as the "Enhanced Management Plan," under which monitoring efforts would be expanded to include prey-base surveys and trapping surveys for presence of the shrew (LOA 2011, p. 8). The Enhanced Management Plan also provided additional assurances that the plan would continue to be carried out, by

calling for funding provisions and for the establishment of a City resolution to codify the City's long-term commitment (LOA 2011, p. 7). That resolution has been passed, subject to a condition that we exclude the Kern Fan Water Recharge Area from critical habitat designation (Bakersfield Water Board Committee 2011, entire).

*Benefits of Inclusion—Kern Fan Water Recharge Area*

The potential benefits to the shrew of designating the proposed Kern Fan Water Recharge Unit as critical habitat include increased oversight of Federal agencies to assure that they do not permit, fund, or carry out actions in the area that could destroy or adversely modify critical habitat. However, because Buena Vista Lake shrews occur in the proposed unit, Federal agencies carrying out actions affecting the area would be required to consult with us if their actions might affect the shrew, even in the absence of critical habitat (IEc 2013, p. 4-3). Critical habitat may result in additional protective measures from consultation due to the additional emphasis it places on habitat, and due to the different standard used under the Act for judging impacts to that habitat. However, in this particular case, we expect that additional protective measures resulting from critical habitat would be rare. Any such benefits would also be limited to ameliorating the potential impacts of Federal actions. They would not extend to proactive, ongoing management of the habitat to maintain or increase essential habitat features.

Critical habitat designation would also serve to alert the public and State agencies of the presence of the shrew in the area. However, the City of Bakersfield's habitat management plan for the shrew would also serve that purpose to some extent.

*Benefits of Exclusion—Kern Fan Water Recharge Area*

The benefits of exclusion, in this case, would include the continued participation of the City of Bakersfield in its established habitat management plan (LOA 2004, entire), and the adoption by the city of additional improvements as specified in the Enhanced Management Plan (LOA 2011, entire). As discussed above, this would mean habitat protection, monitoring of conditions, and adaptive management to benefit the shrew on an ongoing basis, regardless of actions by Federal agencies in the area. In considering the potential benefits of any management plan we must also consider the likelihood that the plan will continue to be implemented in the future. The City of Bakersfield has demonstrated a commitment to continued implementation by consistently carrying out the terms of the 2004 management plan since its inception. The City's prospective adoption of the Enhanced Management Plan, and its passage of a conditional resolution indicating commitment to that plan and continued funding, also provide strong indications that the City will implement the plan into the indefinite future.

Additional benefits of exclusion include the building of a working relationship between ourselves and the City of Bakersfield, which may foster an atmosphere of mutual trust and input by both sides into shrew conservation actions. Successful

establishment of such a relationship can increase the likelihood that other landowners may be willing to enter similar relationships for the benefit of threatened and endangered species.

*Benefits of Exclusion Outweigh Benefits of Inclusion—Kern Fan Water Recharge Area*

Both designation and exclusion of the Kern Fan Recharge Area provide direct and indirect benefits for the shrew, which we must weigh against each other while taking into account the likelihood that such benefits will actually be realized. In this case, we consider the direct benefits of exclusion to outweigh those of designation, because exclusion can lead to ongoing adaptive conservation management under the Kern Fan HMP. In contrast, designation can only protect the shrew against certain Federal actions, and because the area is occupied year-round by the shrew, most of those actions are already covered by the Act's prohibition against jeopardizing the continued existence of a listed species (16 U.S.C. 1536(7)(a)(2)).

Similarly, the indirect benefits of exclusion (the fostering of a working relationship with the City of Bakersfield to provide for the conservation of the shrew), outweigh the indirect benefits of designation (alerting the public to the shrew's presence in the area). Another indirect benefit of critical habitat is the establishment and general publication of the habitat needs of the species, but this benefit can be realized through this designation without need to designate the Kern Fan Water Recharge Area specifically.

Finally, although the benefits of designating the Kern Fan area are essentially certain, the benefits of exclusion are also very likely to occur. The City of Bakersfield has established a long-standing practice of following its habitat management plan for the conservation benefit of the shrew. They have also worked closely with us to improve the plan, and have passed a city ordinance to codify their intent to carry out the terms of the improved plan into the indefinite future. Accordingly, we find that the conservation benefits of excluding the Kern Fan Water Recharge Area from critical habitat designation outweigh the conservation benefits of specifying the area as part of the shrew's critical habitat.

*Exclusion Will Not Result in Extinction of the Subspecies*

Because of the conservation benefits and habitat protections discussed above that the City of Bakersfield will implement, with our input, in the absence of critical habitat designation and because the shrew is known from seven existing locations, six of which we are designating as critical habitat, we conclude that exclusion of the Kern Fan Water Recharge Area (proposed Unit 3) will not result in extinction of the subspecies. Therefore, based on the above discussion, the Secretary is exercising her discretion to exclude approximately 2,687 ac (1,088 ha) of land in the Kern Fan Water Recharge Area from this final revised critical habitat designation.

**Required Determinations**

*Regulatory Planning and Review (Executive Orders 12866 and 13563)*

Executive Order 12866 provides that the Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget will review all significant rules. The Office of Information and Regulatory Affairs has determined that this rule is not significant.

Executive Order 13563 reaffirms the principles of E.O. 12866 while calling for improvements in the nation's regulatory system to promote predictability, to reduce uncertainty, and to use the best, most innovative, and least burdensome tools for achieving regulatory ends. The executive order directs agencies to consider regulatory approaches that reduce burdens and maintain flexibility and freedom of choice for the public where these approaches are relevant, feasible, and consistent with regulatory objectives. E.O. 13563 emphasizes further that regulations must be based on the best available science and that the rulemaking process must allow for public participation and an open exchange of ideas. We have developed this rule in a manner consistent with these requirements.

*Regulatory Flexibility Act (5 U.S.C. 601* et seq.*)*

Under the Regulatory Flexibility Act (RFA; 5 U.S.C. 601 *et seq*.), as amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA; 5 U.S.C

801 *et seq.*), whenever an agency is required to publish a notice of rulemaking for any proposed or final rule, it must prepare and make available for public comment a regulatory flexibility analysis that describes the effects of the rule on small entities (i.e., small businesses, small organizations, and small government jurisdictions). However, no regulatory flexibility analysis is required if the head of an agency certifies the rule will not have a significant economic impact on a substantial number of small entities. The SBREFA amended the RFA to require Federal agencies to provide a certification statement of the factual basis for certifying that the rule will not have a significant economic impact on a substantial number of small entities. In this final rule, we are certifying that the critical habitat designation for the Buena Vista Lake shrew will not have a significant economic impact on a substantial number of small entities. The following discussion explains our rationale.

According to the Small Business Administration, small entities include small organizations, such as independent nonprofit organizations; small governmental jurisdictions, including school boards and city and town governments that serve fewer than 50,000 residents; as well as small businesses. Small businesses include manufacturing and mining concerns with fewer than 500 employees, wholesale trade entities with fewer than 100 employees, retail and service businesses with less than $5 million in annual sales, general and heavy construction businesses with less than $27.5 million in annual business, special trade contractors doing less than $11.5 million in annual business, and agricultural businesses with annual sales less than $750,000. To determine if potential economic impacts on these small entities are significant, we

consider the types of activities that might trigger regulatory impacts under this rule, as well as the types of project modifications that may result. In general, the term "significant economic impact" is meant to apply to a typical small business firm's business operations.

To determine if the final designation of critical habitat for the shrew would significantly affect a substantial number of small entities, we consider the number of small entities affected within particular types of economic activities (e.g., energy, local government). We apply the "substantial number" test individually to each industry to determine if certification is appropriate. However, the SBREFA does not explicitly define "substantial number" or "significant economic impact." Consequently, to assess whether a "substantial number" of small entities is affected by this designation, this analysis considers the relative number of small entities likely to be impacted in an area. In some circumstances, especially with critical habitat designations of limited extent, we may aggregate across all industries and consider whether the total number of small entities affected is substantial. In estimating the number of small entities potentially affected, we also consider whether their activities have any Federal involvement.

Designation of critical habitat only affects activities authorized, funded, or carried out by Federal agencies. Some kinds of activities are unlikely to have any Federal involvement and so will not be affected by critical habitat designation. In areas where the species is present, Federal agencies already are required to consult with us under section 7 of the Act on activities they authorize, fund, or carry out that may affect the Buena

Vista Lake shrew. Federal agencies also must consult with us if their activities may affect critical habitat. Designation of critical habitat, therefore, could result in an additional economic impact on small entities due to the requirement to reinitiate consultation for ongoing Federal activities (see *Application of the "Adverse Modification Standard"* section).

In our final economic analysis of the critical habitat designation, we evaluated the potential economic effects on small business entities resulting from conservation actions related to the listing of the Buena Vista Lake shrew and the designation of critical habitat. The analysis is based on the estimated impacts associated with the rulemaking as described in Chapters 3 through 5 and Appendix A of the analysis and evaluates the potential for economic impacts related to: (1) Water management (availability and delivery); (2) agricultural production; and (3) energy development.

The incremental impacts for this designation are expected to consist almost entirely of administrative costs. These costs are likely to be borne by city and county governmental jurisdictions, as well as several energy utilities. Exhibit A-1 of the FEA describes entities that may potentially be affected by critical habitat designation and assesses whether they are considered small entities under the RFA based on the applicable small entity thresholds by North American Industry Classification System (NAICS) code. While there is a potential for other third party involvement, these are the entities we foresee potentially participating in consultation. As shown in Exhibit A-1, none of the entities expected to bear incremental impacts is considered to be small under

the RFA. Potentially, some incremental impacts borne by the energy utilities may be passed on to individual customers in the form of increased energy prices. However, given the small size of the impacts, such an outcome is unlikely.

In summary, we considered whether this designation would result in a significant economic effect on a substantial number of small entities. Based on the above reasoning and currently available information, we concluded that this rule would not result in a significant economic impact on a substantial number of small entities. None of the entities potentially affected in any significant way by such costs qualify as small entities under the SBREFA. Therefore, we are certifying that the designation of critical habitat for the Buena Vista Lake shrew will not have a significant economic impact on a substantial number of small entities, and a regulatory flexibility analysis is not required.

*Energy Supply, Distribution, or Use—Executive Order 13211*

Executive Order 13211 (Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use) requires agencies to prepare Statements of Energy Effects when undertaking certain actions. OMB has provided guidance for implementing this Executive Order that outlines nine outcomes that may constitute "a significant adverse effect" when compared to not taking the regulatory action under consideration:

- Reductions in crude oil supply in excess of 10,000 barrels per day (bbls);
- Reductions in fuel production in excess of 4,000 barrels per day;

- Reductions in coal production in excess of 5 million tons per year;
- Reductions in natural gas production in excess of 25 million mcf per year;
- Reductions in electricity production in excess of 1 billion kilowatt-hours per year or in excess of 500 megawatts of installed capacity;
- Increases in energy use required by the regulatory action that exceed the thresholds above;
- Increases in the cost of energy production in excess of one percent;
- Increases in the cost of energy distribution in excess of one percent; or
- Other similarly adverse outcomes.

Although two energy companies operate facilities within the designation (Pacific Gas and Electric (PG&E) and Southern California Gas Company (SoCal Gas)), we do not anticipate recommending additional shrew conservation measures on their activities due to the designation of critical habitat. As a result, we do not anticipate critical habitat designation to affect energy use, production, or distribution. Additional administrative time spent consulting with us due to critical habitat may cost these companies $2,000 on an annualized basis, which is less than 0.01 percent of the annual revenues of either PG&E or SoCal Gas.

In addition, our analysis concludes that it is possible that solar energy developments and oil and gas exploration may be proposed in the future within the critical habitat. No current plans exist for these activities, however. In the case that future solar energy project or oil and gas developments are proposed, we do not expect

the presence of critical habitat for the shrew to change our recommendations with respect to shrew conservation. That is, all conservation efforts recommended via section 7 consultation on these projects would be made regardless of whether critical habitat is designated. Consequently, the only costs would be from the relatively minor administrative effort to consider critical habitat as part of future consultations.

Accordingly, the FEA finds that none of the potential outcomes listed above are likely to result from this designation of critical habitat (IEc 2013, Appendix A). Thus, based on information in the economic analysis, energy-related impacts associated with Buena Vista Lake shrew conservation activities within critical habitat are not expected. As such, the designation of critical habitat is not expected to significantly affect energy supplies, distribution, or use. Therefore, this action is not a significant energy action, and no Statement of Energy Effects is required.

*Unfunded Mandates Reform Act (2 U.S.C. 1501* et seq.*)*

In accordance with the Unfunded Mandates Reform Act (2 U.S.C. 1501 *et seq*.), we make the following findings:

(1) This rule will not produce a Federal mandate. In general, a Federal mandate is a provision in legislation, statute, or regulation that would impose an enforceable duty upon State, local, or tribal governments, or the private sector, and includes both "Federal intergovernmental mandates" and "Federal private sector mandates." These terms are

defined in 2 U.S.C. 658(5)–(7). "Federal intergovernmental mandate" includes a regulation that "would impose an enforceable duty upon State, local, or tribal governments" with two exceptions. It excludes "a condition of Federal assistance." It also excludes "a duty arising from participation in a voluntary Federal program," unless the regulation "relates to a then-existing Federal program under which $500,000,000 or more is provided annually to State, local, and tribal governments under entitlement authority," if the provision would "increase the stringency of conditions of assistance" or "place caps upon, or otherwise decrease, the Federal Government's responsibility to provide funding," and the State, local, or tribal governments "lack authority" to adjust accordingly. At the time of enactment, these entitlement programs were: Medicaid; Aid to Families with Dependent Children work programs; Child Nutrition; Food Stamps; Social Services Block Grants; Vocational Rehabilitation State Grants; Foster Care, Adoption Assistance, and Independent Living; Family Support Welfare Services; and Child Support Enforcement. "Federal private sector mandate" includes a regulation that "would impose an enforceable duty upon the private sector, except (i) a condition of Federal assistance or (ii) a duty arising from participation in a voluntary Federal program."

The designation of critical habitat does not impose a legally binding duty on non-Federal Government entities or private parties. Under the Act, the only regulatory effect is that Federal agencies must ensure that their actions do not destroy or adversely modify critical habitat under section 7. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal

agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. Furthermore, to the extent that non-Federal entities are indirectly impacted because they receive Federal assistance or participate in a voluntary Federal aid program, the Unfunded Mandates Reform Act would not apply, nor would critical habitat shift the costs of the large entitlement programs listed above onto State governments.

(2) We do not believe that this rule will significantly or uniquely affect small governments because the designation of critical habitat imposes no obligations on State or local governments. By definition, Federal agencies are not considered small entities, although the activities they fund or permit may be proposed or carried out by small entities. Also, this rule would not produce a Federal mandate of $100 million or greater in any year; that is, it is not a "significant regulatory action" under the Unfunded Mandates Reform Act. The FEA concludes incremental impacts may occur due to administrative costs of section 7 consultations; however, these are not expected to significantly affect small governments.

Consequently, we do not believe that this critical habitat designation will significantly or uniquely affect small government entities. As such, a Small Government Agency Plan is not required.

*Takings—Executive Order 12630*

In accordance with Executive Order 12630 (Government Actions and Interference with Constitutionally Protected Private Property Rights), we have analyzed the potential takings implications of designating critical habitat for the Buena Vista Lake shrew in a takings implications assessment. As discussed above, the designation of critical habitat affects only Federal actions. Although private parties that receive Federal funding, assistance, or require approval or authorization from a Federal agency for an action may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency. The FEA has concluded that this critical habitat designation does not affect landowner actions that do not require Federal funding or permits, nor does it preclude development of habitat conservation programs or issuance of incidental take permits to permit actions that do require Federal funding or permits to go forward. The takings implications assessment concludes that this designation of critical habitat for the Buena Vista Lake shrew does not pose significant takings implications for lands within or affected by the designation.

*Federalism—Executive Order 13132*

In accordance with Executive Order 13132 (Federalism), this rule does not have significant federalism effects. A federalism impact summary statement is not required. In keeping with Department of the Interior and Department of Commerce policy, we specifically met with, requested information from, and coordinated development of this critical habitat designation with appropriate State resource agencies in California. We

did not receive comments from State agencies. The designation of critical habitat in areas currently occupied by the Buena Vista Lake shrew may impose nominal additional restrictions to those currently in place and, therefore, may have little incremental impact on State and local governments and their activities. The designation may have some benefit to these governments in that the areas that contain the physical or biological features essential to the conservation of the species are more clearly defined, and the elements of the features of the habitat necessary to the conservation of the species are specifically identified. This information does not alter where and what federally sponsored activities may occur. However, it may assist local governments in long-range planning (rather than having them wait for case-by-case section 7 consultations to occur).

Where State and local governments require approval or authorization from a Federal agency for actions that may affect critical habitat, consultation under section 7(a)(2) would be required. While non-Federal entities that receive Federal funding, assistance, or permits, or that otherwise require approval or authorization from a Federal agency for an action, may be indirectly impacted by the designation of critical habitat, the legally binding duty to avoid destruction or adverse modification of critical habitat rests squarely on the Federal agency.

*Civil Justice Reform—Executive Order 12988*

In accordance with Executive Order 12988 (Civil Justice Reform), the Office of the Solicitor has determined that the rule does not unduly burden the judicial system and

that it meets the applicable standards set forth in sections 3(a) and 3(b)(2) of the Order. We are designating critical habitat in accordance with the provisions of the Act. To assist the public in understanding the habitat needs of the species, the rule identifies the elements of physical or biological features essential to the conservation of the Buena Vista Lake shrew. The designated areas of critical habitat are presented on maps, and the rule provides several options for the interested public to obtain more detailed location information, if desired.

*Paperwork Reduction Act of 1995 (44 U.S.C. 3501* et seq.*)*

This rule does not contain any new collections of information that require approval by OMB under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*). This rule will not impose recordkeeping or reporting requirements on State or local governments, individuals, businesses, or organizations. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number.

*National Environmental Policy Act (42 U.S.C. 4321* et seq.*)*

It is our position that, outside the jurisdiction of the U.S. Court of Appeals for the Tenth Circuit, we do not need to prepare environmental analyses pursuant to the National Environmental Policy Act (NEPA; 42 U.S.C. 4321 *et seq.*) in connection with designating critical habitat under the Act. We published a notice outlining our reasons

for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244). This position was upheld by the U.S. Court of Appeals for the Ninth Circuit (*Douglas County* v. *Babbitt*, 48 F.3d 1495 (9th Cir. 1995), cert. denied 516 U.S. 1042 (1996)).

*Government-to-Government Relationship with Tribes*

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. We determined that there are no tribal lands occupied by the Buena Vista Lake shrew at the time of listing that contain the physical or biological features essential to conservation of the species, and no tribal lands unoccupied by the shrew that are essential for the conservation of the species. Therefore, we are not designating critical habitat for the shrew on tribal lands.

**References Cited**

A complete list of all references cited is available on the Internet at *http://www.regulations.gov* and upon request from the Sacramento Fish and Wildlife Office (see **FOR FURTHER INFORMATION CONTACT**).

**Author(s)**

The primary authors of this rulemaking are the staff members of the Sacramento Fish and Wildlife Office.

**List of Subjects in 50 CFR Part 17**

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

**Regulation Promulgation**

Accordingly, we amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

**PART 17--[AMENDED]**

1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; 4201–4245; unless otherwise noted.

2. In § 17.95, amend paragraph (a) by revising the entry for "Buena Vista Lake Shrew (*Sorex ornatus relictus*)", to read as follows:

**§ 17.95 Critical habitat—fish and wildlife.**

(a) *Mammals.*

* * * * *

Buena Vista Lake Shrew (*Sorex ornatus relictus*)

(1) Critical habitat units are depicted for Kings and Kern Counties, California, on the maps below.

(2) Within these areas, the primary constituent elements of the physical or biological features essential to the conservation of the Buena Vista Lake shrew consist of permanent and intermittent riparian or wetland communities that contain:

(i) A complex vegetative structure with a thick cover of leaf litter or dense mats of low-lying vegetation. Associated plant species can include, but are not limited to, Fremont cottonwoods, willows, glasswort, wild-rye grass, and rush grass. Although moist soil in areas with an overstory of willows or cottonwoods appears to be favored, such overstory may not be essential.

(ii) Suitable moisture supplied by a shallow water table, irrigation, or proximity to permanent or semipermanent water.

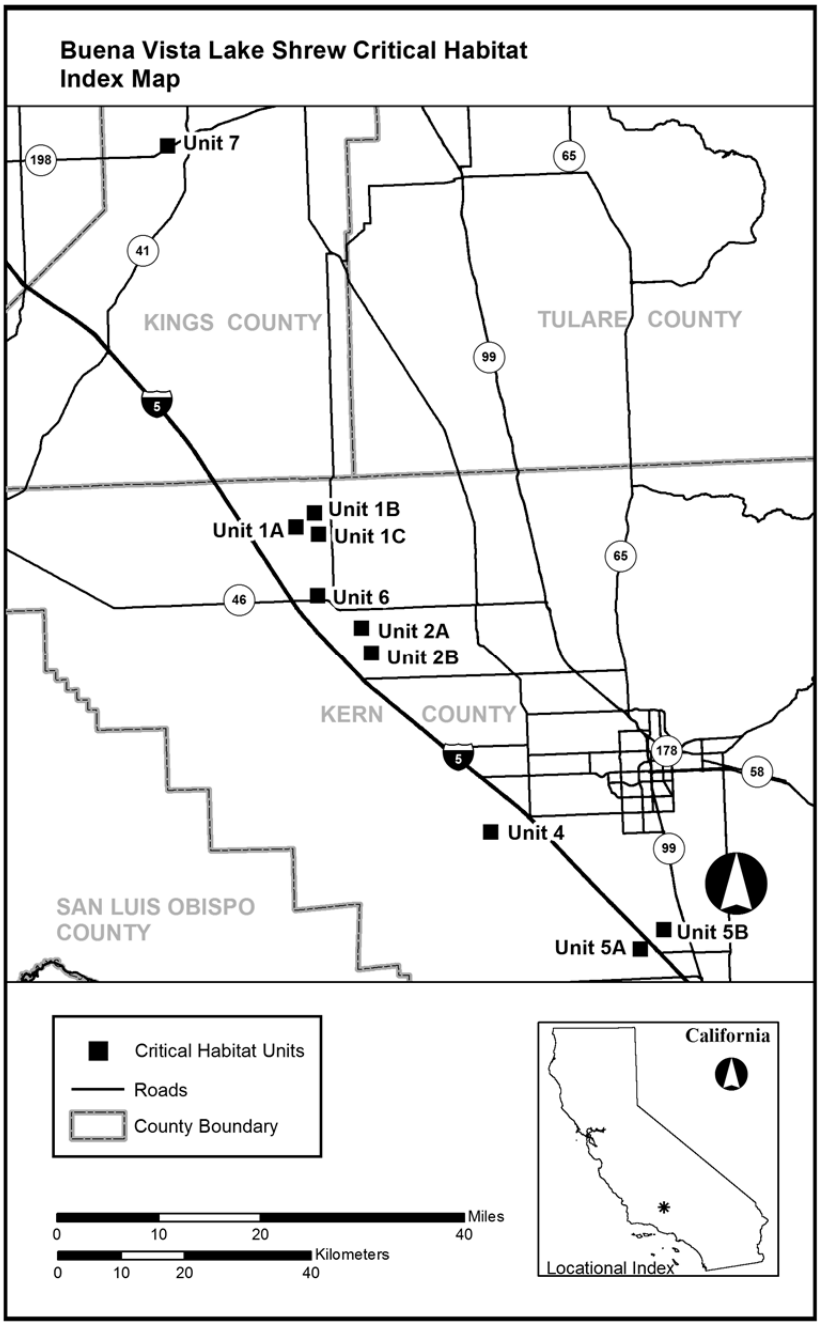
(iii) A consistent and diverse supply of prey. Although the specific prey species used by the Buena Vista Lake shrew have not been identified, ornate shrews are known to eat a variety of terrestrial and aquatic invertebrates, including amphipods, slugs, and insects.

(3) Critical habitat does not include manmade structures (such as buildings, aqueducts, runways, roads, and other paved areas) and the land on which they are located existing within the legal boundaries on the effective date of this rule.

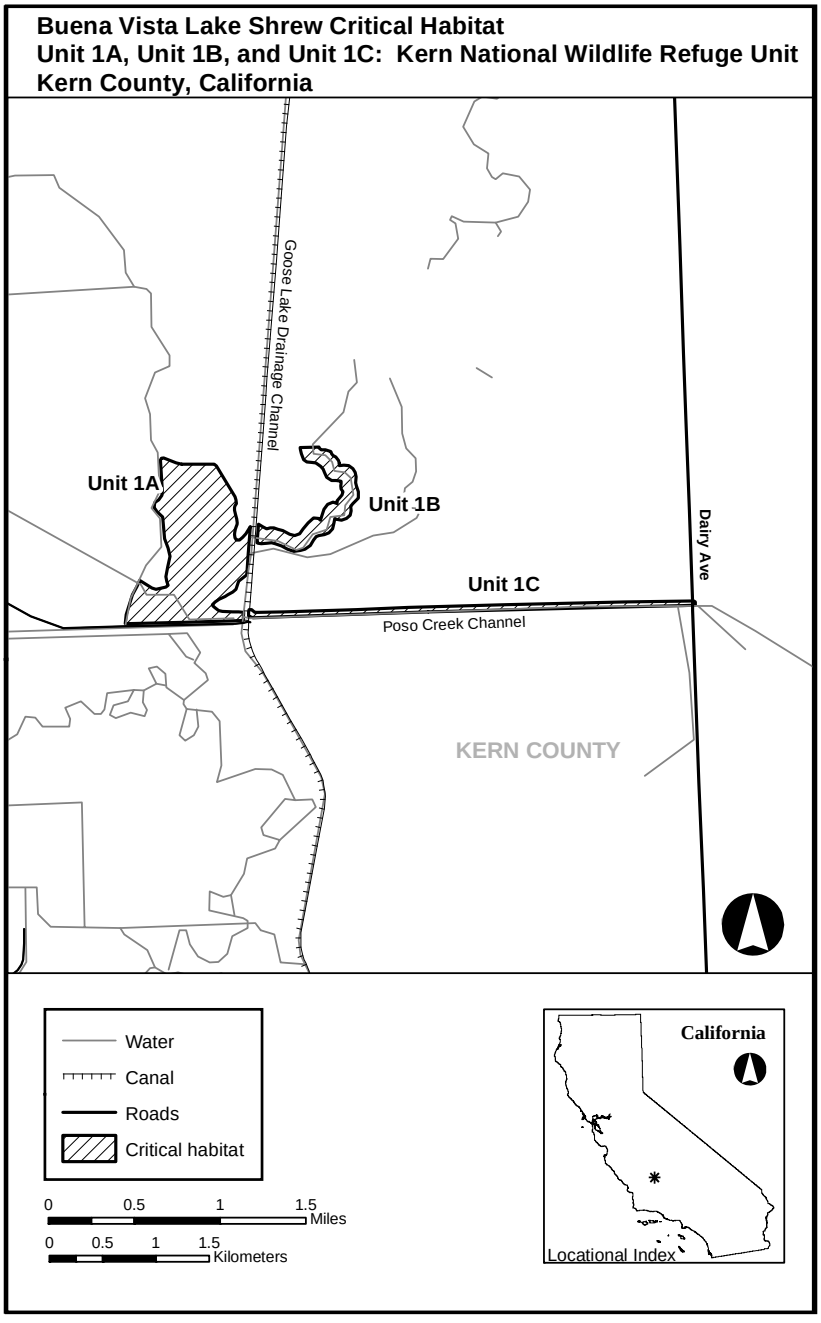
(4) *Critical habitat map units*. Data layers defining map units were created on a base of USGS 7.5′ quadrangles, and critical habitat units were then mapped using Universal Transverse Mercator (UTM) coordinates. The maps in this entry, as modified by any accompanying regulatory text, establish the boundaries of the critical habitat

designation. The coordinates or plot points or both on which each map is based are available to the public at *http://criticalhabitat.fws.gov/crithab/,* and at *http://www.regulations.gov* at Docket No. FWS–R8–ES–2009–0062, and at the field office responsible for this designation. You may obtain field office location information by contacting one of our regional offices, the addresses of which are listed at 50 CFR 2.2.

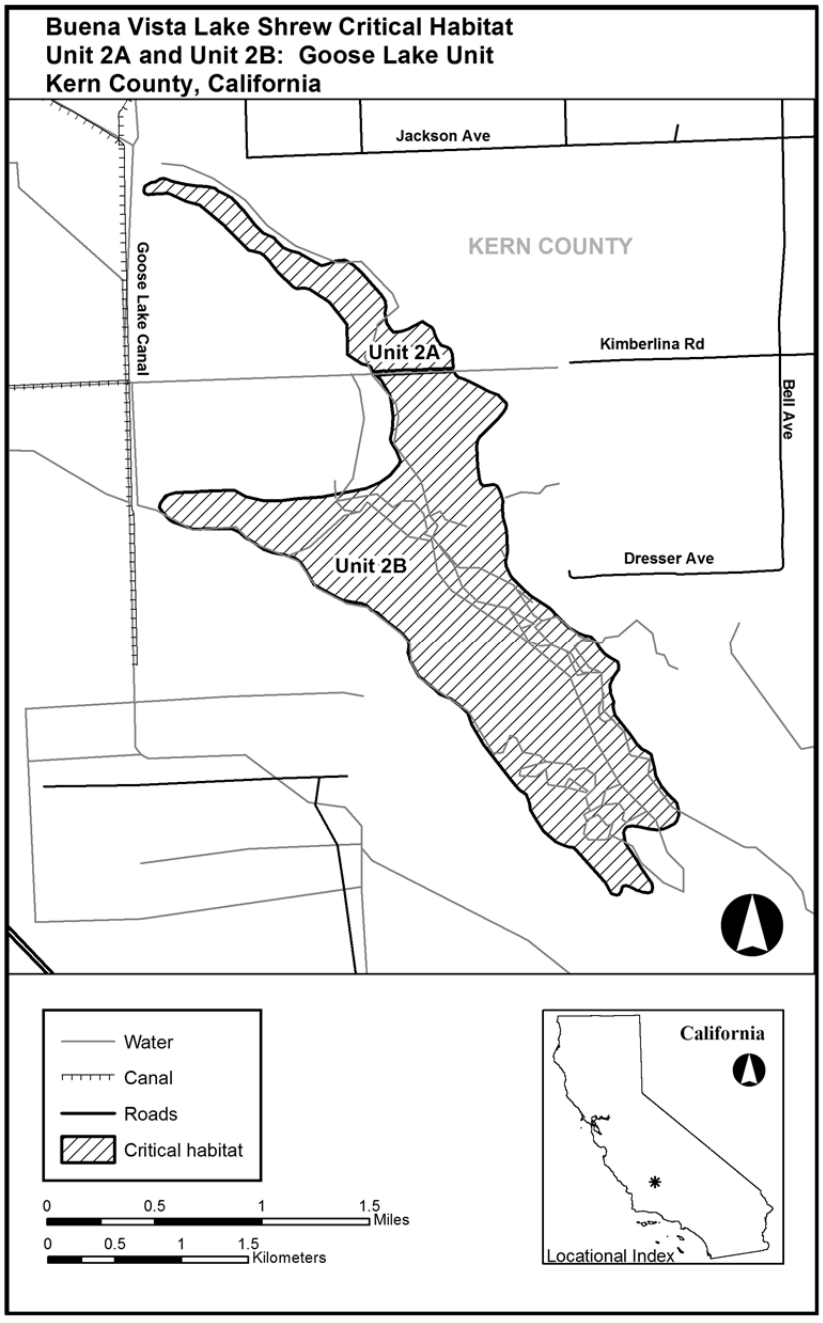
(5) Index map of Buena Vista Lake shrew critical habitat units follows:


Buena Vista Lake Shrew Critical Habitat
Index Map
Unit 7
198
65
41
KINGS COUNTY
TULARE COUNTY
99
5
Unit 1B
Unit 1A
Unit 1C
65
46
Unit 6
Unit 2A
Unit 2B
KERN COUNTY
178
5
58
Unit 4
99
SAN LUIS OBISPO
COUNTY
Unit 5B
Unit 5A
Critical Habitat Units
Roads
County Boundary
Miles
0 10 20 40
Kilometers
0 10 20 40
California
Locational Index

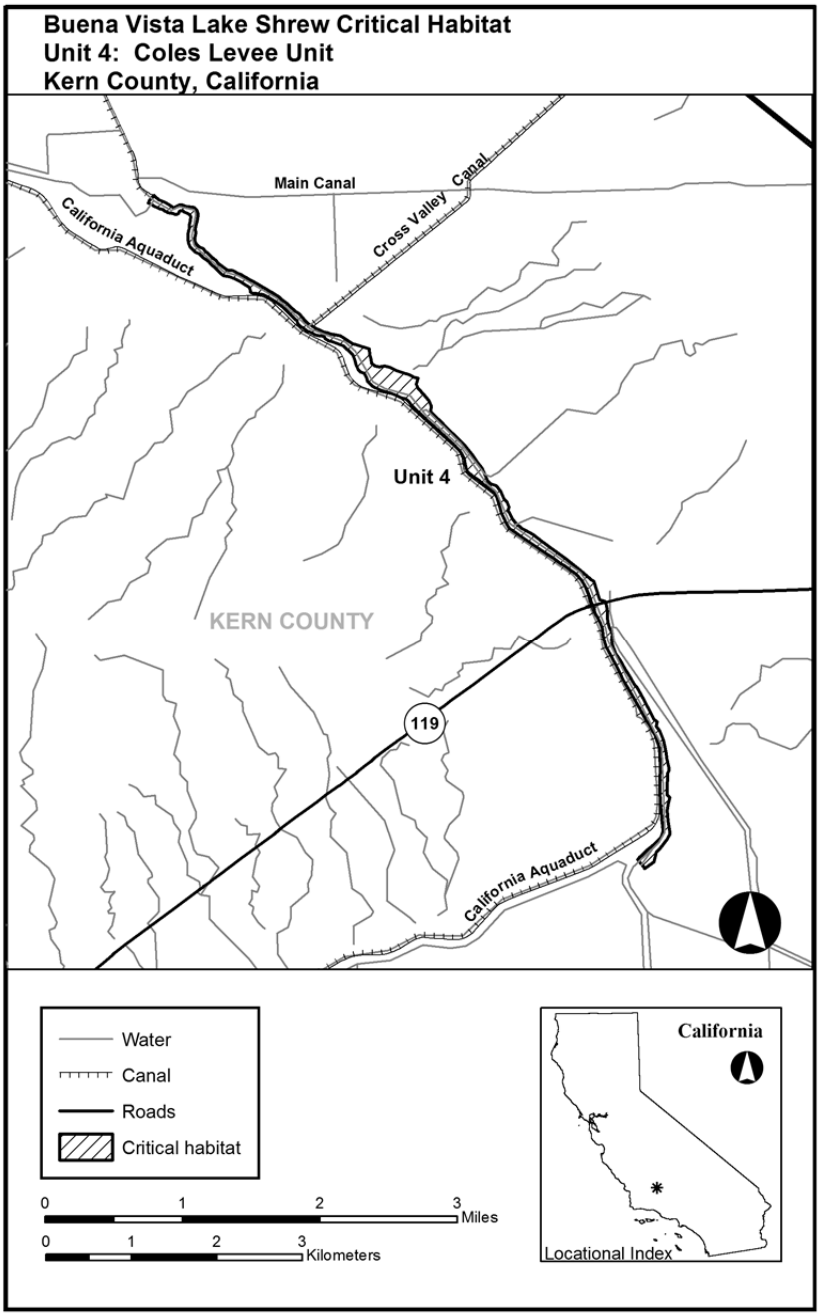
(6) Unit 1: Kern National Wildlife Refuge Unit, Kern County, California. Note: Map of Unit 1, Kern National Wildlife Refuge Unit, follows:



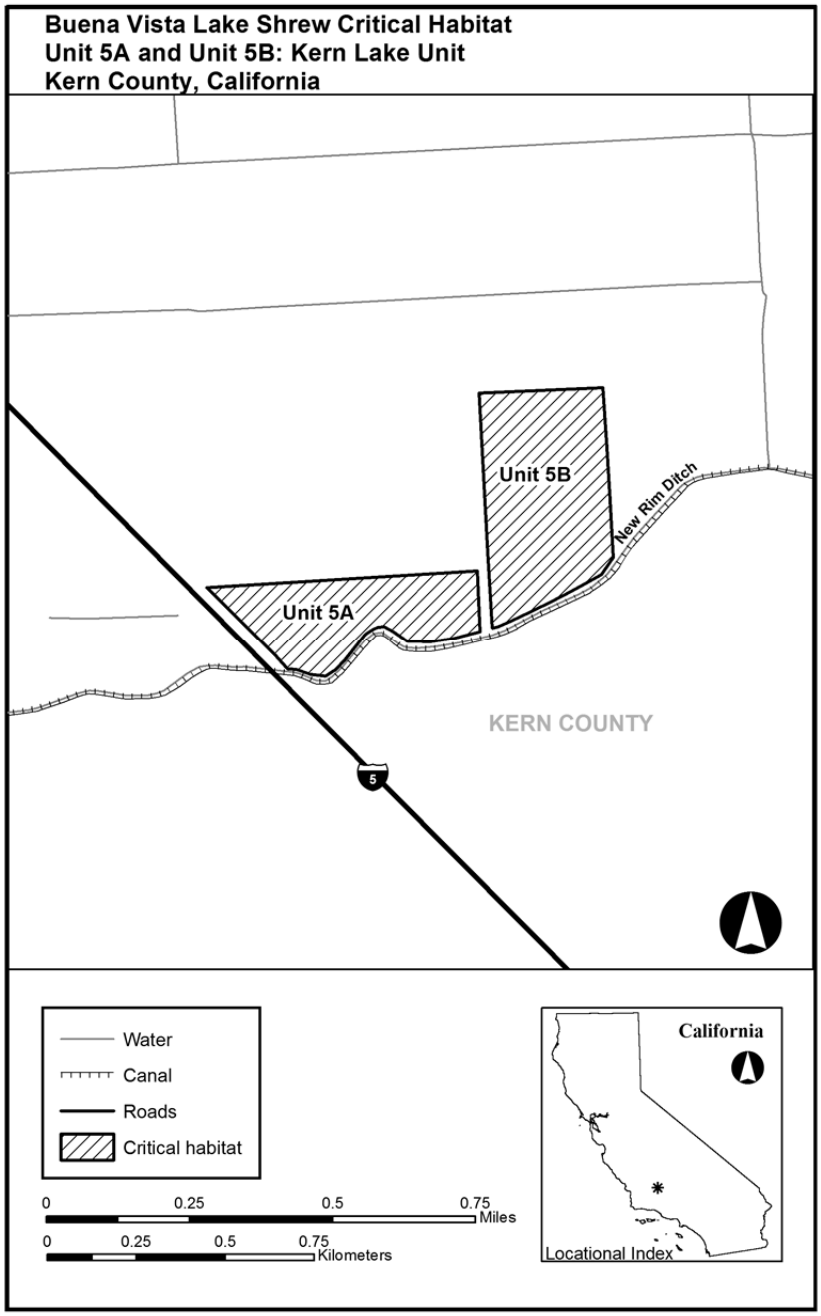
(7) Unit 2: Goose Lake Unit, Kern County, California. Note: Map of Unit 2, Goose Lake Unit, follows:



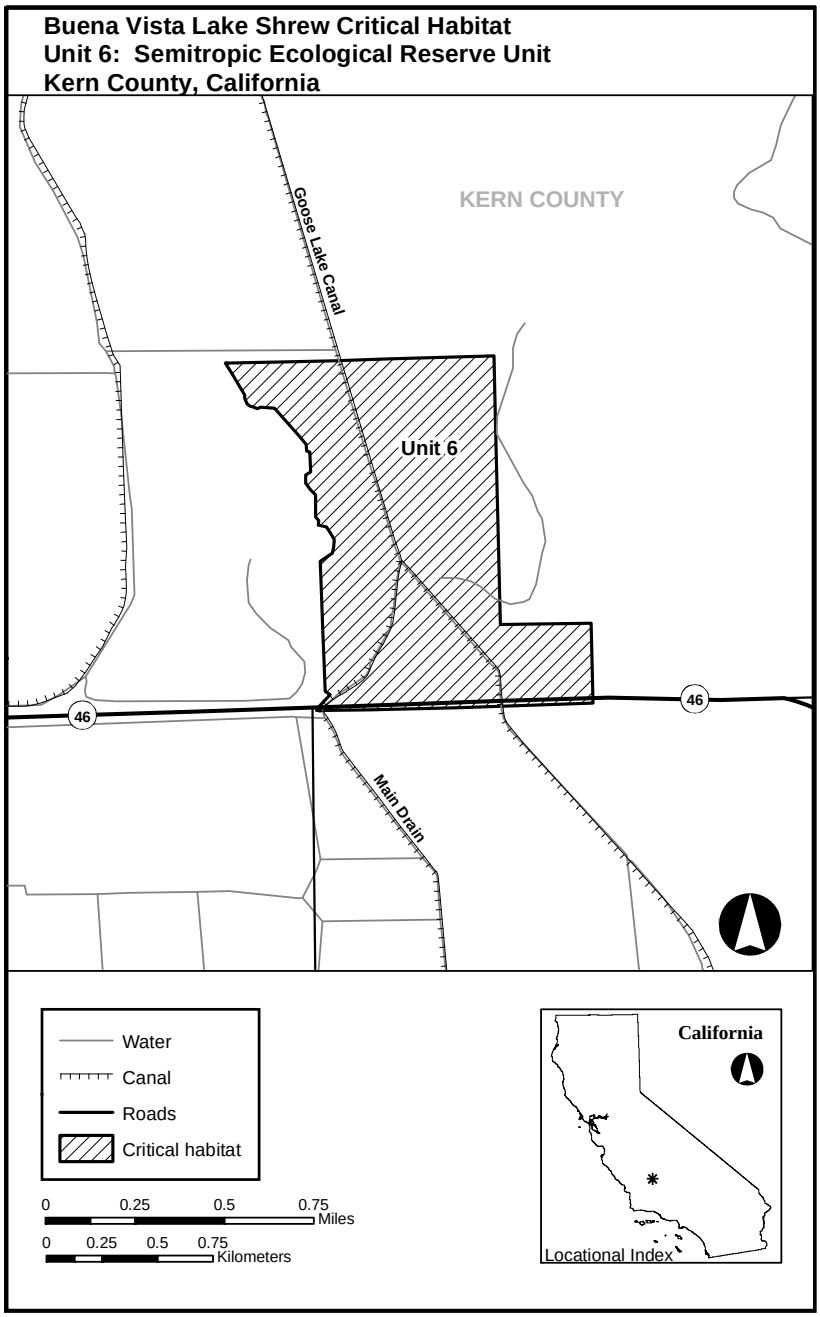
(8) Unit 4: Coles Levee Unit, Kern County, California. Note: Map of Unit 4, Coles Levee Unit, follows:



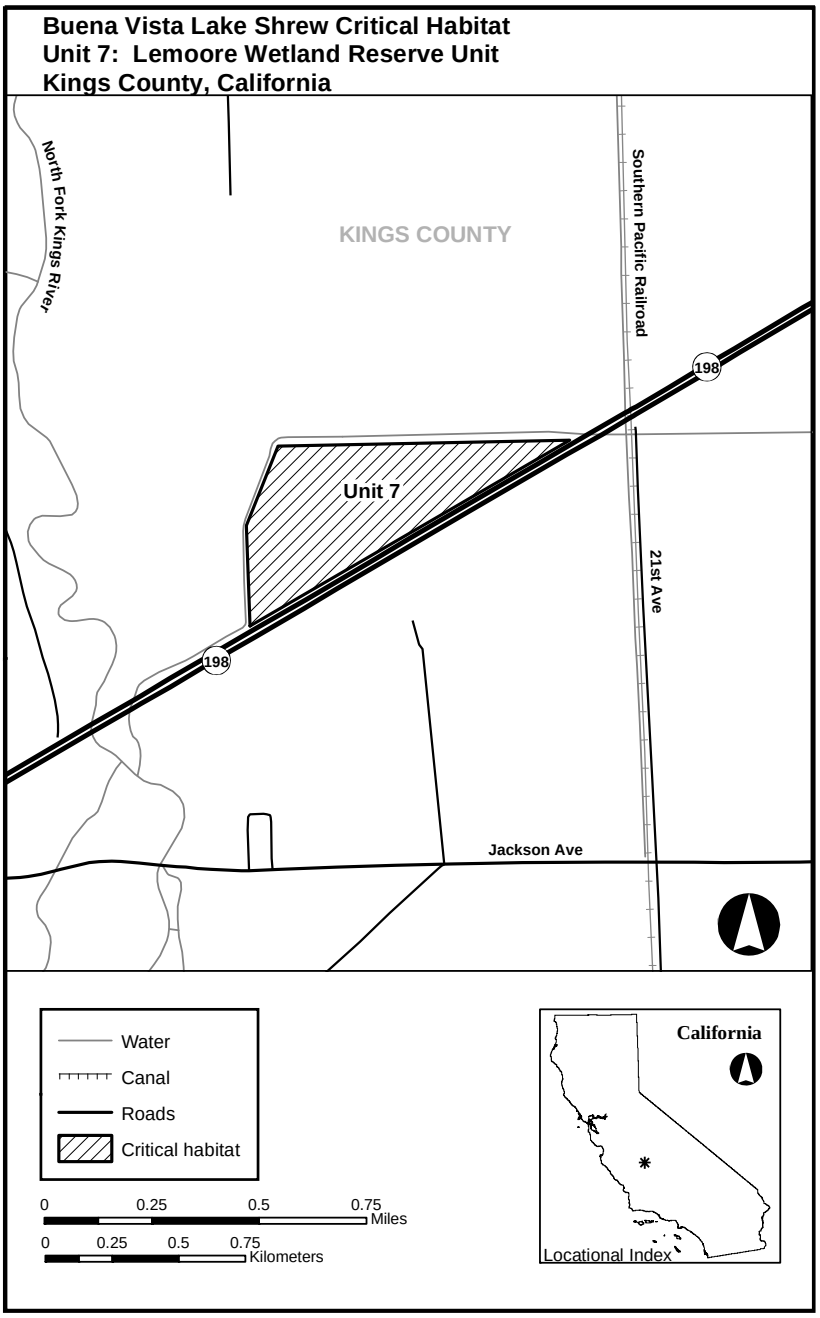
(9) Unit 5: Kern Lake Unit, Kern County, California. Note: Map of Unit 5, Kern Lake Unit, follows:



(10) Unit 6: Semitropic Ecological Reserve Unit, Kern County, California. Note: Map of Unit 6, Semitropic Ecological Reserve Unit, follows:



(11) Unit 7: Lemoore Wetland Reserve Unit, Kings County, California. Note: Map of Unit 7, Lemoore Wetland Reserve Unit, follows:



* * * * *

Dated: JUN 20 2013

Rachel Jaconson

Principal Deputy Assistant Secretary for Fish and Wildlife and Parks

Billing Code 4310-55-P